MICROLEPIDOPTERA and their PARASITES reared from FIELD COLLECTIONS in the NORTHEASTERN UNITED STATES

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UNITED STATES DEPARTMENT OF AGRICULTURE

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By J. V. Schaffner, Jr.
Forest Insect and Disease Laboratory, Northeastern Forest Experiment Station, Forest Service

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Microlepidoptera and Their Parasites Reared From Field Collections in the Northeastern United States

by

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Introduction

Insect pests cause greater losses to our timber resource every year than fire, traditionally the most dreaded enemy of our forests. Several methods have been used to reduce this insect damage. One method kills the insects with chemical sprays. Another uses silvicultural practices to keep forest stands healthy and thus reduces their susceptibility to insect attack. A third utilizes predators and parasites that attack the insects; this last method is called biological control.

This publication reports one phase of studies designed to acquire new knowledge on the distribution, food plants, life histories, and parasites of lepidopterous insects in Northeastern United States. This kind of knowledge is basic for all methods of controlling forest insect pests. The information contained in this report will be of particular value to entomologists and students interested in biological control.

These studies were begun in 1915 by the Bureau of Entomology and Plant Quarantine at its laboratory at Melrose Highlands, Mass., to determine the native hosts of introduced parasites of the gypsy moth (*Porthetria dispar* L.) and the brown-tail moth (*Nygmia phaeorrhoea* Donov.), and to determine the possible effect of these parasites on the native hosts and their natural enemies. Data on the macrolepidoptera and their parasites reared from field collections were published in U. S. Department of Agriculture Miscellaneous Publication 188 in July 1934. The data on the microlepidoptera and their parasites as given in this report were accumulated, for the most part, during the same period.

A great quantity of field-collected material was sent to the laboratory by members of the field staff engaged in moth control work and enforcement of quarantine regulations during the period 1915–35.

[1] The late Mr. Schaffner retired in June 1953. During the period this study was in progress, he was entomologist at the Melrose Highlands (Mass.) Laboratory and the New Haven Station of the Division of Forest Insect Investigations, Bureau of Entomology and Plant Quarantine. The work of this division was transferred to the Forest Service when the Department of Agriculture was reorganized in 1954.

Many Federal, State, and municipal officials also cooperated by sending in miscellaneous collections. Since 1935, when the laboratory was moved to New Haven, Conn., the number of field collections of native larvae has been greatly reduced.

The bulk of the material handled in these studies consisted of larvae and a few pupae of macrolepidoptera, microlepidoptera, Tenthredinoidea, and a few Coleoptera. Numerous hosts and their parasites were reared, and considerable knowledge was acquired about their life histories, habits, and abundance.

In the early years of these studies numerous parasites were reared that were difficult to determine specifically until revisions had been made on many of the groups. Many parasitic species, new to science, were reared from the field collections; and as a result most of those reared from the macrolepidoptera and many from the microlepidoptera have been described and named by taxonomists. From the microlepidoptera, however, a considerable number of the parasites reared, and determined as new, have not been described and given species names because the series of adults obtained were too few in number, or the adults were all of one sex. In other series, because of the need for revision, certain groups cannot be determined beyond the genus.

Considerable time has elapsed since much of the field work for this study was done. This time lapse has permitted taxonomists to become more familiar with the particular insect groups, thus facilitating determination of many of the species.

Field Data Requested From the Collectors

Insect collections were mailed to the laboratory in mailing tubes and each collection was accompanied by a note slip. Each collector was requested to furnish the following information: (1) Date of collection; (2) name of collector; (3) town and State where collection was made; (4) host plant; (5) estimate of insect's abundance; (6) degree of defoliation, if any; (7) approximate area of infestation; and (8) additional information of interest.

Methods of Handling Field Collections

Inasmuch as most of the insects received were still in the larval or pupal stage, it was necessary to place them in rearing to permit issuance of adults or parasites. Because of the differences in habits of the various species received, and because of the lack of knowledge concerning the hibernation requirements of many of them, it was also necessary to use several types of cages. Undoubtedly some species failed to reach maturity because of faulty handling or improper hibernation facilities.

On arrival at the laboratory each collection was examined. The specimens were counted whenever possible and placed in rearing cages. Usually no attempt was made to count such insects as leaf miners and bud and twig borers in the larval stage. Sometimes an estimate was made of the number in a collection; at other times adults, parasites, and dead larvae were counted when the experiment was closed.

Attempts were always made to identify the insect in the larval stage when such specimens were received. This was especially so when a

solitary larva or a collection containing only a few individuals was received, since parasitization or disease might prevent determination if identification was delayed for the emergence of adults. Furthermore, when a species was received for the first time one or more representative larvae were inflated or placed in preserving solution for future reference. These larvae were invaluable as aids in identifying species that appeared in abundance only at long intervals, as well as solitary larvae that were seldom found.

The type of cage used depended upon the number of larvae and whether they required soil for pupation. Larvae that did not require soil were placed in wooden trays with cloth bottoms and glass tops, pasteboard boxes, small tin cans, or glass jars. Those that required soil were placed in glass-covered metal trays with at least a part of the bottom covered with fine mesh wire, or in various types of glass jars and tin cans into which had been placed layers of sifted soil or peat moss.

Each collection of larvae was supplied with its proper food and cared for throughout the larval instars. From this time until all possibility of adult emergence had passed, they were examined regularly for issuance of adult parasites. Then containers with hibernating material were stored during the late fall and winter, in a cool place where temperature fluctuations were slight. During the spring (and, for a few species, throughout the summer) this material was examined regularly for issuance of adults and parasites.

Certain hymenopterous cocoons and larvaevorid puparia that normally pass the winter in the ground were successfully carried through hibernation in glass cylinders with bottoms of plaster of paris, and with clean sawdust as a substitute for soil. Glass vials with cotton plugs were satisfactory as issuance containers for many species of parasitic Hymenoptera, such as species of *Apanteles*, *Bracon*, *Meteorus*, and others. The adults of the Larvaevoridae and the larger Hymenoptera were killed and pinned while fresh and given temporary labels bearing the rearing number and date of issuance. The smaller Hymenoptera, after being killed, were placed in small glass vials with suitable labels, and were relaxed and pinned or placed on card points during the following winter.

Parasitism and Hyperparasitism

Host insects, with very few exceptions, were collected while in the immature or larval stages. Therefore, they had not been exposed to the extremes of parasitization such as might have occurred had they been left in their natural habitats. Parasites that emerge from larvae in the early instars were likewise often missed because the bulk of the collections were made when the larvae were from half to nearly full grown. For the same reason, parasites that attack their hosts during the last larval instar or in the pupal stage also probably were missed. Parasite cocoons and puparia formed after the arrival of their hosts at the laboratory usually were not exposed to secondary parasites that normally attack them in this stage under natural conditions. Such species of hyperparasites as were reared from them, therefore, must have attacked the primary parasite while within its host prior to the time of collection. For the above reasons the parasite lists given here are not to be considered complete for any of the hosts.

The Insect Lists

This report includes the names of host plants (common names wherever possible); localities where collections were made (except for common species where the States only are listed); data on life histories (monthly occurrence of larvae, pupae, and adults); and a list of parasites reared.

The parasite list contains the names of the insect hosts from which each species of parasite was reared, the localities and/or States where the hosts were collected, and the months in which the adult parasites issued. General information is also given on the usual number of parasites per host and, for many species, the number of generations per year, and the method of hibernation.

Two publications were used as guides to the systematic arrangement for families, genera, and species of Lepidoptera and Hymenoptera:

1. *Check list of the Lepidoptera of Canada and the United States. Part II. Microlepidoptera.* J. McDunnough. Memoirs of the Southern California Academy of Sciences, v. 2, No. 1. 1939.

2. *Hymenoptera of America north of Mexico. Synoptic Catalog.* C. F. W. Muesebeck, Karl V. Krombein, and Henry K. Townes, and others. U. S. Department of Agriculture, Agriculture Monograph No. 2. 1951.

C. W. Sabrosky of the Insect Identification and Parasite Introduction Laboratory, Entomology Research Branch, Agricultural Research Service, prepared the systematic arrangement of the genera and species of Diptera mentioned in this publication.

The following symbols have been used in this publication: (1) the astérisk (*) to indicate the number of parasitized hosts, not the number of parasites (the latter being gregarious usually were not counted); (2) the section mark (§) to indicate hyperparasites; (3) the single dagger (†) to indicate that not all the larvae were counted—totals were sometimes estimated; and (4) the double dagger (‡) to indicate the species so marked as the hibernating host.

Host-Parasite List

Lepidoptera

FAMILY LIMACODIDAE

Sibine stimulea **(Clem.)** **saddleback caterpillar**

Food plants: Basswood, blackberry, wild cherry, corn, dahlia, ginkgo, maple, oaks, perennial pea, spicebush, weeds.

Occurrence: Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania.

Totals received: Collections, 16; larvae, 48; years, 11.

Larvae: August to October.

Pupae: Spring (hibernates as prepupal larva in cocoon).

Adults: June and July.

Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Larvaevoridae				
(Unidentified puparia)	4	1	1	9
Phorocera longiuscula (Wlk.)	1	1	1	6
Hymenoptera:				
Apanteles sp	1	1	1	6

***Parasa indetermina* (Bdv.)**

Food plant: Bayberry.

Occurrence: Massachusetts, Rhode Island, Connecticut, and New Jersey.

Totals received: Collections, 5; larvae, 105; years, 5.

Larvae: July to September.

Pupae: Cocoons spun in September.

Adults: Late June and July.

Parasites: None.

***Parasa* sp.**

Food plant: Wild cherry.

Occurrence: Roycefield, N. J., and Raubsville, Pa.

Totals received: Collections, 2; larvae, 4; years, 2.

Larvae: August.

Pupae and adults: Not reared.

Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Apanteles schaffneri Mues	3	2	2	4

***Euclea delphinii* (Bdv.)**

Food plants: Apple, alder, scrub oak.

Occurrence: Massachusetts, Connecticut, and New Jersey.

Totals received: Collections, 4; larvae, 7; years, 4.

Larvae: August and September.

Pupae: Probably in spring, though cocoons are spun in the fall.

Adults: June and July.

Parasites:

Diptera: Larvaevoridae (Unidentified maggots)	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
	2	1	1	2

***Sisyrosea textula* (H.-S.)**

Food plants: Norway maple, oaks.

Occurrence: Massachusetts and Connecticut.

Totals received: Collections, 8; larvae, 18; years, 6.

Larvae: August to early October.

Pupae: Spring (hibernates as a prepupal larva in cocoon).

Adults: June and July.

Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Anaporia limacodis (Towns.)	1	1	1	1
Anaporia sp	1	1	1	2

***Cnidocampa flavescens* (Wlk.) oriental moth**

Food plants: Norway and sycamore maple, apple, buckthorn, cherry, pear, and various other deciduous plants.

Occurrence: Introduced from Japan, probably on nursery stock about 1900. Infestations are confined to metropolitan district of Boston, Mass. The most serious infestations are largely found in backyards and vacant lots in residential sections. Each year some fruit and shade trees are defoliated.

Totals received: Collections, 102; larvae and cocoons, 12,934; years, 15.

Larvae: Late July to October.

Pupae: May and June (hibernates as prepupal larva in tough cocoon attached to twigs or branches of its host plant).

Adults: Late June to early August.

Parasites:

	Parasite specimens	Years recovered	Collections yielding parasites	Host larvae or cocoons collected
Diptera:				
Chaetexorista javana B. & B.[1]	14	3	7	1, 323
Compsilura concinnata (Meig.)	3	3	3	293
Hymenoptera:				
Psycophagus omnivorus (Wlk.)	4	1	1	227

[1] This parasite was imported from Japan in 1929 and 1930. Approximately 85,000 adults were liberated at 16 points in Boston and vicinity. The first recoveries were made in 1930. See U. S. Dept. Agr. Cir. 277, June 1933.

Phobetron pithecium (A. & S.) hag moth

Food plants: Apple, aspen, ash, wild cherry, chokecherry, hickory, maple, oaks, shadbush, walnut.

Occurrence: Massachusetts, Rhode Island, Connecticut, New York, and New Jersey.

Totals received: Collections, 22; larvae, 38; years, 13.

Larvae: July to October.

Pupae: Spring (hibernates as prepupal larva in cocoon).

Adults: June to July.

Parasites.

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Diptera:				
Anaporia pristis (Wlk.)	1	1	1	1
Larvaevoridae (unidentified puparium)	1	1	1	7
Phorocera longiuscula (Wlk.)	1	1	1	2
Hymenoptera:				
Spilochalcis nortonii (Cress.)	2	1	1	2

Prolimacodes badia (Hbn.)

Food plants: Wild cherry, chokecherry, oak, tupelo, walnut, winterberry.

Occurrence: Massachusetts, Connecticut, and New Jersey.

Totals received: Collections, 7; larvae, 12; years, 6.

Larvae: August and September.

Pupae: Spring (hibernates as prepupal larva in cocoon).

Adults: Late June and July.

Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Diptera:				
Larvaevoridae (unidentified puparium)	1	1	1	1

Lithacodes fasciola (H.-S.)

Food plants: Bayberry, high blueberry, wild cherry, black currant, hickory, oaks.

Occurrence: New Hampshire, Massachusetts, and Connecticut.

Totals received: Collections, 11; larvae, 46; years, 6.

Larvae: August and September.

Pupae: Cocoon from fall to June (probably hibernates as prepupal larva).

Adults: Late June and July.

Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Systropus macer Loew	1	1	1	10
Anaporia limacodis (Towns.)	1	1	1	10
Hymenoptera:				
Apanteles empretiae Vier	17	2	2	2

Packardia geminata (Pack.)

Food plant: Wild cherry.
Occurrence: One larva from Wakefield, Mass.
Larva: August–September.
Pupa: Cocoon formed in September.
Adults: June.
Parasites: None.

Tortricidia flexuosa (Grt.)

Food plants: Gray birch, wild cherry, oak.
Occurrence: Massachusetts and Connecticut.
Totals received: Collections, 3; larvae, 5; years, 2.
Larvae: August–September.
Pupae: Cocoons formed in September.
Adults: July.
Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Anaporia limacodis (Towns.)	1	1	1	2

Tortricidia flexuosa form *caesonia* (Grt.)

Food plant: Oak.
Occurrence: One larva from Saugus, Mass.
Larva: August–September.
Pupa: Cocoon spun first of October.
Adult: July.
Parasites: None.

FAMILY MEGALOPYGIDAE

Lagoa crispata Pack.

Food plants: Apple, aspen, bayberry, blueberry, wild cherry, huckleberry, red maple, oak, shadbush, willow.

Occurrence: Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania.

Totals received: Collections, 23; larvae, 343; years, 13.

Larvae: July to September.

Pupae: May and June (hibernates as a prepupal larva in cocoon).

Adults: June and July.

Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Anaporia pristis (Wlk.)	34	2	3	87
Compsilura concinnata (Meig.)	3	1	2	47
Larvaevoridae (unidentified puparia)	43	5	6	174
Phorocera claripennis Macq	3	2	2	91
Hymenoptera:				
Brachymeria sp	1	1	1	26

FAMILY ZYGAENIDAE

Harrisina americana (Guer.) grape leaf skeletonizer

Food plants: Grape, ivy.
Occurrence: Connecticut and New Jersey.
Totals received: Collections, 4; larvae, 406; years, 2.
Larvae: Late June to August.
Pupae: August or September to June.
Adults: June and July.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Hymenoptera:				
Apanteles harrisinae Mues	6	1	1	199

FAMILY PYRAUSTIDAE

Desmia funeralis (Hbn.) grape leaf folder

Food plant: Grape.
Occurrence: Massachusetts and Connecticut.
Totals received: Collections, 2; larvae, 7; years, 1.
Larvae: July and August.
Pupae: September to June.
Adults: June and July.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Hymenoptera:				
Triclistus fulvipes (Cress.)	1	1	1	6

Pantographa limata G. & R. basswood leaf roller

Food plant: Basswood.
Occurrence: Massachusetts and Vermont.
Totals received: Collections, 2; larvae, 15; years, 2.
Larvae: July to September.
Pupae: September to July.
Adults: June and July.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Diptera:				
Phorocera erecta Coq	3	1	1	11

Evergestis straminalis (Hbn.)

Food plants: Chinese cabbage, horseradish, radish, turnip.
Occurrence: Maine, Massachusetts, and Rhode Island.
Totals received: Collections, 24; larvae, 302; years, 12.
Larvae: June to October.
Pupae: November to June, and August.
Adults: June to July, and late August and early September.
Generations: Apparently two in Massachusetts and Rhode Island and one in northern Maine.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Diptera:				
Compsilura concinnata (Meig.)	1	1	1	11
Phryxe vulgaris (Fall.)	1	1	1	20
Hymenoptera:				
Cremnops montrealensis (Morr.)	7	4	4	27
Hemitelini	1	1	1	21
Horogenes insularis (Cress.)	1	1	1	21
Triclistus fulvipes (Cress.)	1	1	1	9

***Loxostege dasconalis* (Wlk.)**

Food plant: False indigo.
Occurrence: Eastern Massachusetts.
Totals received: Collections, 3; larvae, 14; years, 2.
Larvae: July and August.
Pupae: August to early July.
Adults: July.
Parasites: None.

***Loxostege obliteralis* (Wlk.)**

Food plant: Morning glory.
Occurrence: Vermont.
Totals received: Collections, 1; larvae, 14; years, 1.
Larvae: July and August.
Pupae: Late August to June.
Adults: June.
Parasites: None.

***Loxostege helvialis* (Wlk.)**

Food plant: Goldenrod.
Occurrence: Eastern Massachusetts.
Totals received: Collections, 5; larvae, 118; years, 1.
Larvae: July to September.
Pupae: Spring to June (hibernates as full-grown larva).
Adults: June and July.
Parasites: None.

***Tholeria reversalis* (Guen.)**

Food plants: False indigo.
Occurrence: Long Island, N. Y.
Totals received: Collections, 2; larvae, 61; years, 1.
Larvae: June and July.
Pupae: Late July and early August.
Adults: July and August.
Parasites: None.

***Udea rubigalis* (Guen.) celery and greenhouse leaf tier**

Food plants: Ageratum, celery, chrysanthemum, delphinium, geranium, heliotrope, marguerite.
Occurrence: Maine and Massachusetts.
Totals received: Collections, 7; larvae, 41; years, 7.
Larvae: January, February, March, May, and November.
Pupae: Apparently all months in greenhouses.
Adults: February, March, April, June, and November.
Generations: Apparently several in greenhouses.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Apanteles sp. (cocoons)	4	1	1	9

***Phlyctaenia* sp.**

Food plants: Poplar, willow.
Occurrence: Maine, Massachusetts, and Pennsylvania.
Totals received: Collections, 12; larvae, 29; years, 5.
Larvae: July to October.
Pupae: August and spring (hibernates as prepupal larvae in cocoons).
Adults: June and August.

Generations: Apparently two generations in Massachusetts and one in Maine.

Parasites:

Hymenoptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Apanteles n. sp	[1]8	3	3	12
Campoplex validus (Cress.)	1	1	1	1

[1] A total of 59 cocoons in 8 masses from 8 host larvae.

Phlyctaenia tertialis (Guen.)

Food plant: Elderberry.

Occurrence: Maine, Massachusetts, and Rhode Island.

Totals received: Collections, 9; larvae, 417; years, 4.

Larvae: July to September.

Pupae: August, and September to July.

Adults: August, and May to July.

Generations: Two in Rhode Island, and one in Maine.

Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Larvaevoridae (unidentified puparia)	2	1	1	77
Nemorilla floralis (Fall.)	1	1	1	150
Phorocera erecta Coq	3	3	3	196
Hymenoptera:				
Campoletis patsuiketorum (Vier.)	1	1	1	150
Campoplegini cocoons	2	1	2	24
Labrorychus sp	3	1	1	150
Mesochorus discitergus (Say)	1	1	1	56
Meteorus loxostegei Vier	1	1	1	56
Phytodietus pulcherrimus (Cress.)	24	2	4	286

Macrobotys pertextalis (Led.)

Food plants: Blackberry, joe-pye-weed, meadowrue, sweet pepperbush, violet, and other low-growing plants.

Occurrence: Maine, Massachusetts, New Hampshire, New York, New Jersey, and Pennyslvania.

Totals received: Collections, 39; larvae, 286; years, 13.

Larvae: May to August.

Pupae: June, July, and early August.

Adults: Unknown.

Generations: Two.

Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Larvaevoridae (unidentified puparia)	2	1	1	22
Leskiomima tenera (Wied.)	2	2	2	88
Phorocera erecta Coq	3	1	1	41
Pseudochaeta siminina Rein	3	1	1	30
Hymenoptera:				
Agathis sanctus (Say)	1	1	1	75
Apanteles sp	3	2	2	34
Clypta erratica Cress	1	1	1	21
Macrocentrus iridescens French	27	1	1	36
M. pyraustae Vier	[1]*5	1	1	30
M. sp	9	4	4	141
Mesochorus sp. (Ex *Apanteles* cocoon)	1	1	1	21
Meteorus dimidiatus (Cress.)	1	1	1	14
M. hyphantriae Riley	19	2	2	37
M. sp	1	1	1	20
Microgaster harnedi Mues	1	1	1	30
Nepiera marginata (Prov.)	1	1	1	5
Oncophanes betulae Mues	2	1	1	5
Phaeogenes hebrus (Cress.)	1	1	1	11
Triclistus porpinquus (Cress.)	4	1	1	30

[1] 67 adults issued from 5 masses of cocoons.

***Macrobotys thestealis* (Wlk.)**

Food plant: Violet.
Occurrence: Beverly, Mass.
Totals received: Collections, 1; pupae, 2; years, 1.
Larvae: May and June.
Pupae: June and July.
Adults: July.
Parasites: None.

***Macrobotys theseusalis* (Wlk.)**

Food plant: Fern.
Occurrence: Melrose, Mass.
Total received: One larva.
Larva: May, June.
Pupa: June and July.
Adult: July.
Parasites: None.

***Pyrausta futilalis* (Led.)**

Food plant: Dogbane.

Occurrence: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and New Jersey.

Totals received: Collections, 36; larvae, 3,520; years, 13.

Larvae: June to October.

Pupae: July and August, and June (hibernate as prepupal larvae in cocoons).

Adults: June to July and August and September.

Generations: At least one and a partial second brood from New Hampshire and south. Possibly only one brood in Maine.

Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Diptera:				
Larvaevoridae (unidentified puparia)	4	2	2	76
Lixophaga plumbea Ald	49	3	6	1, 309
Nemorilla floralis (Fall.)	1	1	1	93
Phorocera erecta Coq	13	5	7	1, 689
Phyllomya sp near *aenea* Coq	[1] 117	3	7	1, 238
Zenillia euchaetiae Sellers	9	3	4	201
Hymenoptera:				
Apanteles pyraustae Vier	*452	11	29	3, 133
Campoplex validus (Cress.)	72	8	12	699
Chelonus (*Microchelonus*) *egregicolor* Vier (Ex *Apanteles* cocoons)	31	4	7	960
Elasmus atratus How	29	1	1	597
Horismenus microgaster (Ashm.)	1	1	1	597
Mesochorus sp	4	1	1	597
Meteorus loxostegei Vier	144	3	7	1, 173
Perilampus fulvicornis Ashm	6	2	2	193
Tetrastichus modestus How	14	1	1	597

[1] As many as 3 individuals per host.

***Pyrausta unifascialis* (Pack.)**

Food plant: Bean.
Occurrence: Saugus, Mass.
Total received: One larva.
Larva: July and August.
Pupa: August.
Adult: August.
Parasites: None.

***Pyrausta borealis* Pack.**

Food plant: Wild black cherry.
Occurrence: Brunswick, N. J.
Total received: One larva.
Larva: June and July.
Pupa: Late July and August.
Adult: August.
Parasites: None.

***Pyrausta signatalis* (Wlk.)**

Food plant: Beebalm (blossoms).
Occurrence: Melrose, Mass.
Totals received: Collections, 2; larvae, 45; years, 2.
Larvae: July and August.
Pupae: August and spring (hibernates in prepupal stage in cocoon).
Adults: August, and June to early July.
Generations: At least a partial second brood.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Diptera:				
Achaetoneura sp	1	1	1	25
Nemorilla floralis (Fall.)	4	2	2	45
Phorocera erecta Coq	1	1	1	25
Hymenoptera:				
Bracon gelechiae Ashm	4	1	1	25

FAMILY PYRALIDIDAE

***Omphalocera dentosa* Grt.**

Food plant: Barberry.
Occurrence: Connecticut.
Totals received: Collections, 3; larvae, 172; years, 2.
Larvae: July, August, and September.
Pupae: Spring, hibernates in last larval stage.
Adults: Late May and June.
Parasites: None.

FAMILY EPIPASCHIIDAE

***Oneida lunulalis* (Hlst.)**

Food plant: Oak.
Occurrence: Massachusetts.
Totals received: Collections, 2; larvae, 2; years, 2.
Larvae: July and August.
Pupae: September to June.
Adults: June.
Parasites: None.

***Tetralopha robustella* Zell.** **pine webworm**

Food plants: Pitch pine, red pine, Scotch pine.
Occurrence: New Hampshire, Massachusetts, and Connecticut.
Totals received: Collections, 15; larvae,† 457; years, 8.
Larvae: July to October.
Pupae: Spring; hibernates as prepupal larvae from fall to spring.
Adults: June and July.

Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Diptera:				
Achaetoneura spectabilis (Ald.)	10	3	3	141
Zenillia blanda (O. S.)	15	1	1	100
Hymenoptera:				
Syzeuctus elegans (Cress.)	4	1	2	35
Triclistus fulvipes (Cress.)	12	1	1	100
Zaleptopygus retiniae (Cress.)	6	3	4	144

Tetralopha n. sp., near *asperatella* (Clem.)

Food plant: Aspen.

Occurrence: Maine, New Hampshire, Massachusetts, and Connecticut.

Totals received: Collections, 7; larvae, 79; years, 1.

Larvae: July to September.

Pupae: Spring; hibernates as prepupal larvae in cocoons.

Adults: June and July.

Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Diptera:				
Leskiomima tenera (Wied.)	1	1	1	11
Hymenoptera:				
Horogenes n. sp	1	1	1	40
Phytodietus burgessi (Cress.)	1	1	1	40
Syzeuctus elegans (Cress.)	6	1	3	54

Tetralopha asperatella (Clem.)

Food plants: Black, scrub, and white oaks.

Occurrence: Boxford, Melrose, and Wakefield, Mass.; and Saybrook, Conn.

Totals received: Not recorded.

Larvae: August to October.

Pupae: Spring; hibernates as a prepupal larva in cocoon.

Adults: June and July.

Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Diptera:				
Metopiops n. (?) sp. (near *pyralidis* (Coq.))	1	1	1	12
Nemorilla floralis (Fall.)	3	1	1	12
Hymenoptera:				
Idechthis sp	1	1	1	12
Syzeuctus elegans (Cress.)	7	1	1	10
Zaleptopygus sp. near *tetralophae* (Cush.)	2	1	1	12

Tetralopha sp. (new)?

Food plant: Beech.

Occurrence: Maine and Massachusetts.

Totals received: Collections, 4: larvae, 43; years, 1.

Larvae: July, August, and September.

Pupae: Spring (like other species of *Tetralopha*, hibernates in cocoon, probably as prepupal larva).

Adults: June.

Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Hymenoptera:				
Horogenes sp	2	1	1	18
Syzeuctus elegans (Cress.)	6	1	3	25
Zaleptopygus sp. near *tetralophae* (Cush.)	1	1	1	18

Acrobasis caryivorella Rag.

Food plant: Hickory.
Occurrence: Massachusetts and Connecticut.
Totals received: Collections, 6; larvae, 101; years, 5.
Larvae: May and June.
Pupae: June and July.
Adults: Late June and July.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Diptera:				
Nemorilla floralis (Fall.)	10	3	3	95
Hymenoptera:				
Agathis calcaratus (Cress.)	6	1	1	25
Bracon variabilis (Prov.)	3	1	1	60
Glypta simplicipes Cress.	2	1	1	10
Orgilus sp	1	1	1	25

Acrobasis coryliella Dyar

Food plant: Hazelnut (filbert).
Occurrence: Wakefield, Mass.
Totals received: Collections, 3; larvae, 7; years, 3.
Larvae: May and June.
Pupae: Late June and July.
Adults: July.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Diptera:				
Nemorilla floralis (Fall.)	1	1	1	1
Hymenoptera:				
Exochus apicalis Cress.	1	1	1	3
Phytodietus burgessi (Cress.)	1	1	1	3

Acrobasis betulella Hulst

Food plants: Alder, gray birch.
Occurrence: Maine, New Hampshire, and Massachusetts.
Totals received: Collections, 31; larvae, 509; years, 12.
Larvae: May to July.
Pupae: June, July.
Adults: Late June to early in August.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Diptera:				
Larvaevoridae (unidentified puparium)	1	1	1	17
Hymenoptera:				
Agathis calcaratus (Cress.)	29	6	10	259
Apanteles canarsiae Ashm.	1	1	1	36
Campoplegine cocoons	3	2	3	36
Horogenes comptoniellae (Vier.)	1	1	1	50
H. parviformis (Vier.)	3	2	3	93
Macrocentrus instabilis Mues.	4	2	2	103
Mesostenus thoracicus Cress.	4	1	1	43
Meteorus indagator (Riley)	22	4	5	182
M. niveitarsis (Cress.)	1	1	1	43
Microtypus n. sp.	4	2	2	22
Perilampus fulvicornis Ashm.	6	3	4	143
Phanerotoma tibialis (Hald.)	2	1	1	28
Phytodietus burgessi (Cress.)	5	3	3	103
P. pulcherrimus (Cress.)	1	1	1	50
Scambus hispae (Harris)	2	1	2	113
Nematodes	2	1	1	3

***Acrobasis rubrifasciella* Pack.**

Food plant: Speckled alder.
Occurrence: Orono, Maine.
Totals received: Collections, 1; larvae, 2; years, 1.
Larvae: May and June.
Pupae: June.
Adults: June and July.
Parasites: None.

***Acrobasis comptoniella* Hulst**

Food plant: Sweet fern.
Occurrence: Maine, New Hampshire, and Massachusetts.
Totals received: Collections, 16; larvae,† 531; years, 10.
Larvae: May to July.
Pupae: July and August.
Adults: July and August.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Diptera:				
Lispidea palpigera Coq	1	1	1	12
Nemorilla floralis (Fall.)	3	2	2	200
Schizolachina convecta Wlk	3	1	1	50
Hymenoptera:				
Agathis calcaratus (Cress.)	40	6	8	423
Bracon sp. (cocoons only)	4	1	1	32
Cryptus albitarsis albitarsis (Cress.)	1	1	1	50
Elasmus atratus How	3	1	1	50
Eurytoma crassineura Ashm	1	1	1	50
Exochus pallipes Cress	2	1	1	150
Gelis sp	1	1	1	50
Gravenhorstia aclerivorus (Roh.)	1	1	1	5
Horogenes comptoniella (Vier.)	12	2	2	182
Itoplectis conquisitor (Say)	13	4	5	204
Labrorychus prismaticus (Nort.)	3	2	2	44
Meteorus indagator (Riley)	33	4	6	392
M. niveitarsis (Cress.)	1	1	1	60
M. sp. (unissued cocoons)	2	2	2	20
Microplitis n. sp	2	1	1	50
Microtypus n. sp	1	1	1	19
Phaeogenes sp	3	2	3	125
Pleurotropis sexdentata (Grlt.)	18	1	1	50
Scambus sp	1	1	1	150
Triclistus fulvipes (Cress.)	1	1	1	6

***Acrobasis vaccinii* Riley** **Cranberry fruitworm**

Food plant: Cranberry (fruit).
Occurrence: Dover, Mass.
Total received: One collection of 10 infested cranberries.
Larvae: August, September.
Pupae: (?)
Adults: July, August.
Parasites: None.

***Dioryctria abietella* (D. & S.)**

Food plants: Pine (terminals and cones), Douglas-fir (cambium).
Occurrence: Massachusetts and Connecticut.
Totals received: Collections, 4; an unknown number of larvae in infested cones. White pine tips also infested with *Pityophthorus pulicarius* (Zimm.), and white pine leaders with *Pissodes strobi* (Peck); years, 3.
Larvae: June, July, and September.

Pupae: July, August, and spring.
Adults: August and May.
Generations: Apparently two broods.
Parasites: None.

Dioryctria reniculella (Grt.) Spruce coneworm

Food plant: White spruce (new growth).
Occurrence: Maine and Massachusetts.
Totals received: Collections, 2; larvae, 3; years, 2.
Larvae: May.
Pupae: June.
Adults: Late in June and July.
Parasites: None.

Dioryctria zimmermani (Grt.) Zimmerman pine moth

Food plants: Pitch pine (tips), Corsican pine (trunks), red pine (buds and catkins).
Occurrence: New Hampshire and Massachusetts.
Totals received: Collections, 8; larvae (unknown number); years, 3.
Larvae: June, July, and fall to spring.
Pupae: May, July, and August.
Adults: June to August.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Euderus cushmani (Cwfd.)	3	1	1	(1)
Hyssopus thymus Grlt	22	1	2	(1)
Scambus hispae (Harr.)	12	1	3	(1)

[1] Larvae inside twigs and not counted.

Glyptocera consobrinella (Zell.)

Food plant: *Viburnum dentatum.*
Occurrence: Melrose, Mass.
Totals received: One collection of 4 larvae.
Larvae: July to September.
Pupae: Late in September to June.
Adults: June.
Parasites: None.

Nephopteryx nyssaecolella (Dyar)

Food plant: Tupelo.
Occurrence: Roxbury, Mass.
Totals received: One collection of 10 larvae.
Larvae: July, August.
Pupae: September to June.
Adults: June, July.
Parasites: None.

Meroptera pravella (Grt.)

Food plant: Sumac (blossoms).
Occurrence: Rockport, Mass.
Totals received: One collection of about 25 larvae.
Larvae: September and October in sumac blossoms.
Pupae: Not reared.
Adults: Not reared.

Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Apanteles n. sp., near *acaudus* (Prov.)	5	1	1	25
Eurytoma n. sp	1	1	1	25
Idiomacromerus n. sp	10	1	1	25

Salebria virgatella (Clem.)

Food plant: Black locust.
Occurrence: Melrose and Wakefield, Mass.
Totals received: Collections, 2; larvae, 3; years, 1.
Larvae; July, August.
Pupae: August to June.
Adults: June.
Parasites: None.

Salebria subcaesiella (Clem.) locust leaf roller

Food plants: Black locust, clammy locust.
Occurrence: Maine, New Hampshire, Massachusetts, Connecticut, New York, and New Jersey.
Totals received: Collections, 14; larvae, 65; years, 10.
Larvae; June to September.
Pupae: July and August, and August to spring.
Adults: Late in May to September.
Generations: At least a partial second generation in some areas in the Northeastern States.
Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Nemorilla floralis (Fall.)	2	2	2	17
Phryxe pecosensis (Towns.)	1	1	1	5
Zenillia blanda (O. S.)	3	2	2	10

Salebria semiobscurella Hulst

Food plant: Sumac.
Occurrence: Maine and Massachusetts.
Totals received: Collections, 4; larvae, 475; years, 4.
Larvae: July to September.
Pupae: Fall to spring.
Adults: June, July.
Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Aphria ocypterata Towns	2	1	1	249
Zenillia blanda (O. S.)	2	1	1	52
Hymenoptera:				
Campoplex sp	16	1	1	249
Exochus dorsalis Cress	1	1	1	150
Horogenes sp	2	1	1	150
Hyposoter fugitivus fugitivus (Say)	1	1	1	24
Trichomma reticulatum Davis	9	1	1	150

Zophodia grossulariae (Riley)

Food plant: Gooseberry (fruit).
Occurrence: Wakefield, Mass.
Totals received: One collection of 6 larvae.
Larvae: May, June.
Pupae: June to spring.
Adults: May.
Parasites: None.

Canarsia ulmiarrosorella (Clem.)

Food plant: Elm.
Occurrence: Massachusetts and Connecticut.
Totals received: Collections, 3; larvae, 7; years, 3.
Larvae: June to September.
Pupae: August, and fall to spring.
Adults: Late in May and June, and August.
Generations: Apparently at least a partial second brood.
Parasites: None.

Moodna ostrinella (Clem.)

Food plant: Sumac (blossom heads).
Occurrence: Revere, Mass.
Totals received: One collection of one larva.
Larva: June, July.
Pupa: July.
Adult: July.
Parasites: None.

Plodia interpunctella (Hbn.) Indian-meal moth

Food: Apricots (candied), chocolates, prunes (dried), kidney beans (dried).
Occurrence: Eastern Massachusetts.
Totals received: Collections, 5; larvae, 26; years, 3.
Larvae: Apparently most every month of the year indoors.
Pupae: All months, indoors.
Adults: January, February, June, August, October, and November.
Generations: Two or more.
Parasites: None.

FAMILY PTEROPHORIDAE

Trichoptilus lobidactylus (Fitch)

Food plant: Goldenrod.
Occurrence: Maine and Massachusetts.
Totals received: Collections, 12; larvae, 721; years, 6.
Larvae: May and June.
Pupae: June and July.
Adults: June and July.
Generations: One; apparently passes winter in egg stage.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Diptera:				
Larvaevoridae (unissued puparia)	4	2	2	98
Hymenoptera:				
Meteorus hyphantriae Riley	2	1	1	23
Phobocampe sp	145	5	8	650

Pterophorus periscelidactylus Fitch — grape-plume moth

Food plant: Grape.
Occurrence: New Hampshire, Vermont, and Massachusetts.
Totals received: Collections, 35; larvae 1,552; years, 15.
Larvae: May to July.
Pupae: June, July.
Adults: June and July.
Generations: One; winter is passed in the egg stage.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Apanteles n. sp. (?)	12	2	3	80
Bracon gelechiae Ashm	*6	1	1	1
Elasmus atratus How	[1]§16	1	1	6
Phobocampe (unissued cocoons)	7	1	1	15
Pleurotropis tarsalis (Ashm.)	§1	1	1	3

[1] 16 *E. atratus* issued from 6 *Apanteles* cocoons.

Platyptilia carduidactyla (Riley)

Food plant: Thistle (buds).
Occurrence: Somerville, N. J.
Totals received: One collection of several infested buds.
Larvae: June, July.
Pupae: July.
Adults: July.
Parasites: None.

Oidaematophorus homodactylus (Wlk.)

Food plants: Joe-pye-weed, goldenrod.
Occurrence: Maine, New Hampshire, Massachusetts, and Connecticut.
Totals received: Collections, 25; larvae, 606; years, 12.
Larvae: May and June.
Pupae: June and July.
Adults: Late in June and July.
Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Compsilura concinnata (Meig.)	1	1	1	9
Oxynops anthracina (Big.)	1	1	1	21
Pseudosiphona brevirostris (Coq.)	3	1	1	8
Tachinophyto floridensis (Towns.)	1	1	1	8
Hymenoptera:				
Apanteles pterophori Mues	12	3	3	236
Hyposoter sp	3	1	1	10
Nematodes	1	1	1	21

Oidaematophorus monodactylus (L.)

Food plant: Joe-pye-weed.
Occurrence: Massachusetts, Connecticut, and New York.
Totals received: Collections, 7; larvae, 81; years, 5.
Larvae: May and June.
Pupae: June and July.
Adults: Late in June and July.
Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Larvaevoridae (unissued puparium)	1	1	1	1
Oxynops anthracina (Big.)	5	1	1	32

Episimus argutanus (Clem.)

Food plants: Sumac, poison ivy.
Occurrence: Maine, New Hampshire, and Massachusetts.
Totals received: Collections, 9; larvae, 241; years, 5.
Larvae: June to September.
Pupae: Fall to spring, and July to early September.
Adults: Late in May and June, and August to early in September.
Generations: One, and at least a partial second brood.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Diptera:				
Actia sp	15	2	4	162
Nemorilla floralis (Fall.)	4	2	2	117
Phorocera erecta Coq	1	1	1	50
Hymenoptera:				
Apanteles sp	*8	1	1	4
Dimmockia incongrua (Ashm.)	‡6	1	1	50
Exochus pallipes Cress	1	1	1	50
Labrorychus sp	1	1	1	9
Macrocentrus delicatus Cress	22	2	3	137
Meteorus trachynotus Vier	5	1	1	50
Scambus hispae (Harr.)	1	1	1	50

Endothenia hebesana (Wlk.)

Food plant: False dragon-head.
Occurrence: Beverly and Medford, Mass.
Totals received: Collections, 6; larvae, 77; years, 5.
Larvae: June to August.
Pupae: July and August.
Adults: July and August.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Hymenoptera:				
Ichneumonini (unidentified)	1	1	1	27
Oncophanes americanus (Weed)	4	1	1	25
Scambus pterophori (Ashm.)	2	1	1	5

Taniva albolineana (Kearf.) spruce needle miner

Food plants: Colorado blue spruce, red spruce.
Occurrence: Maine and Massachusetts.
Totals received: Collections, 2; larvae, 39; years, 2.
Larvae: July to June; hibernates in larval stage.
Pupae: Late in May to early in July.
Adults: Late in May to July. (A few adults have been reared from larvae mixed with collections of *Epinotia nanana* Treit. taken in Maine.)
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Hymenoptera:				
Chelonus sp	1	1	1	4

Sciaphila duplex (Wlshm.)

Food plant: Poplar.
Occurrence: Somerville, N. J.
Totals received: One collection of 100 larvae.
Larvae: May and June.

Pupae: June.
Adults: June.
Parasites: None.

Badebecia urticana (Hbn.)

Food plant: Wild cherry.
Occurrence: Melrose, Mass.
Totals received: One collection of 2 larvae.
Larvae: April and May.
Pupae: May and June.
Adults: June.
Parasites: None.

Exartema electrofuscum Hein.

Food plant: Sweet fern.
Occurrence: Maynard, Mass.
Totals received: One small collection of larvae.
Larvae: May and June.
Pupae: July and early in August.
Adults: July and August.
Parasites: None.

Exartema zellerianum (Fern.)

Food plant: Paper birch.
Occurrence: Ayer, Mass.
Totals received: One collection of 36 larvae.
Larvae: May and June.
Pupae: June.
Adults: Late in June and July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Apanteles sp. (unissued cocoons)	6	1	1	36

Exartema cornanum Hein.

Food plant: Red-osier dogwood.
Occurrence: Melrose, Mass.
Totals received: One small collection of larvae.
Larvae: May and June.
Pupae: July.
Adults: July.
Parasites: None.

Exartema exoletum Zell.

Food plant: Currant.
Occurrence: Bangor, Ellsworth, and Oldtown, Maine.
Totals received: Three collections of 35 larvae.
Larvae: May and June.
Pupae: June and July.
Adults: June to August.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Microgaster sp.	1	1	1	29
Phytodietus n. sp.	1	1	1	29

Exartema quadrifidum Zell.

Food plant: Wild cherry.
Occurrence: Bangor, Maine.
Totals received: One small collection of about 25 larvae.
Larvae: May and June.
Pupae: June and July.
Adults: July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Apanteles sp. (cocoons)	13	1	1	25†

Exartema sericoranum Wlshm.

Food plant: Bayberry.
Occurrence: Westerly, R. I.
Totals received: Two collections of 150 larvae.
Larvae: May and June.
Pupae: July.
Adults: July.
Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Nemorilla floralis (Fall.)	1	1	1	25
Hymenoptera:				
Agathis calcaratus (Cress.)	7	1	1	25
Horogenes comptoniellae (Vier.)	5	1	1	25
Labrorychus prismaticus (Nort.)	1	1	1	25
Macrocentrus ancylivorus Roh	4	1	1	25

Exartema valdanum McD.

Food plant: Meadow sweet.
Occurrence: Maine and Massachusetts.
Totals received: Collections, 8; larvae, † 82; years, 7.
Larvae: May and June.
Pupae: June and July.
Adults: June and July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae† collected*
Apanteles cacoeciae Riley	9	1	1	10
Campoplex sp	1	1	1	16
Glypta canadensis Cress	2	1	1	10
Horogenes sp	1	1	1	6
Macrocentrus exartemae Walley	18	2	2	31

Exartema permundanum Clem. raspberry leaf roller

Food plants: Hickory, staghorn sumac.
Occurrence: Hingham and Swampscott, Mass.
Totals received: Two collections of 30 larvae.
Larvae: May to July.
Pupae: July and August.
Adults: Late in July and August.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Agathis calcaratus (Cress.)	2	1	1	25

Olethreutes albiciliana (Fern.)

Food plant: Meadow sweet.
Occurrence: Maine, Massachusetts, and Connecticut.
Totals received: Collections, 4; larvae, 26; years, 3.
Larvae: May to July.
Pupae: June to July.
Adults: June and July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Glypta sp	1	1	1	6

Evora hemidesma (Zell.)

Food plant: Spiraea (wild and cultivated).
Occurrence: Maine and Massachusetts.
Totals received: Collections, 3; larvae, 16; years, 2.
Larvae: May to July.
Pupae: July and August.
Adults: July and August.
Parasites: None.

Rhyacionia buoliana (Schiff.) European pine shoot moth

Food plants: Pines—Austrian, Mugho, red, Scotch.
Occurrence: Massachusetts, Rhode Island, Connecticut, New York, and New Jersey.
Totals received: Collections, 108; larvae, † 6,768; years, 10.
Larvae: July to June (hibernates as larva in early instar).
Pupae: Late in May to July.
Adults: June and July.
Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae† collected*
Lixophaga mediocris Ald	1	1	1	91
Nemorilla floralis (Fall.)	1	1	1	62
Hymenoptera:				
Agathis n. sp	1	1	1	10
Bracon gelechiae Ashm	4	1	1	146
B. politiventris (Cush.)	2	1	1	100
Calliephialtes comstockii (Cress.)	19	5	10	779
Campoplegine larvae	5	1	1	69
Ephialtes pterelas (Say)	2	1	1	62
Eurytoma tylodermatis Ashm	21	4	9	709
Goniozus sp	2	1	1	100
Habrocytus thyridopterigis How	7	1	4	227
Hyssopus thymus Grlt	312	4	42	3,305
Itoplectis conquisitor (Say)	5	1	1	50
Orgilus obscurator (Nees)	18	4	8	712
Pimpla aequalis Prov	1	1	1	194
Pimplopterus parvus (Cress.)	30	1	3	200
Scambus hispae (Harr.)	11	4	8	260
Tetrastichus turionum (Htg.)	*1	1	1	102
Trichogramma minutum Rly	15	1	1	(1)

† Several eggs.

Rhyacionia rigidana (Fern.)

Food plant: Red pine.
Occurrence: Croton Falls, N. Y.
Totals received: Three collections of 156 larvae and pupae.
Larvae: May to July.
Pupae: July to spring.
Adults: April and May.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae and pupae collected*
Calliephialtes comstockii (Cress.)	2	1	1	25
Eurytoma sp	2	1	1	25
Glypta varipes Cress	2	1	2	115
Habrocytus thyridopterigis How	1	1	1	25
Perilampus fulvicornis Ashm	4	1	2	115

Rhyacionia frustrana (Comst.) Nantucket pine moth

Food plants: Pitch pine, short leaf pine.
Occurrence: Marthas Vineyard, Nantucket, Mass., and South Dennis, N. J.
Totals received: Collections, 9; larvae and pupae, 683; years, 5.
Larvae: New England—May and June.
Pupae: New England—July to spring.
Adults: New England—May and June. New Jersey—mid-April to May, and July.
Generations: New England, one; vicinity of New Jersey, two.
Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae† and pupae collected*
Lixophaga mediocris Ald	1	1	1	50
Hymenoptera:				
Agathis pini Mues	2	1	2	286
Bracon gemmaecola (Cush.)	23	3	5	436
Calliephialtes comstockii (Cress.)	12	2	4	586
Campoplex frustranae Cush	17	2	5	606
Copidosoma geniculatum (Dalm.) (?)	4	1	1	158
Cremastus epagoges Cush	1	1	1	50
Eupelmus cyaniceps amicus Grlt	57	2	4	406
Eurytoma tylodermatis Ashm	11	1	3	306
Glypta varipes Cress	54	2	5	606
Goniozus n. sp	1	1	1	128
Haltichella rhyacioniae Gah	48	3	6	459
Hyssopus thymus Grlt	3	1	1	158
Itoplectis conquisitor (Say)	3	1	1	50
Microgaster epagoges Gah	2	1	1	128
Scambus sp	1	1	1	158
Tetrastichus marylandensis (Grlt.)	4	1	1	158
T. varicornis (Grlt.)	3	1	1	158

Petrova comstockiana (Fern.) pitch twig moth

Food plants: Pitch, red, and Scotch pines.
Occurrence: Massachusetts.
Totals received: Collections, 5; larvae and pupae, 60; years, 3.
Larvae: July to spring.
Pupae: May and June.
Adults: June.

Parasites:

Hymenoptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae and pupae collected
Agathis pini Mues	7	1	2	43
Glypta varipes Cress	1	1	1	20

Spilonota ocellana (D. & S.) eye spotted bud moth

Food plants: Apple, mountain-ash, pear, Japanese quince, sumac.
Occurrence: Maine, Massachusetts, and Rhode Island.
Totals received: Collections, 7; larvae, 61; years, 7.
Larvae: July to spring.
Pupae: June and July.
Adults: Late in June and July.
Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Nemorilla floralis (Fall.)	1	1	1	10
Hymenoptera:				
Agathis agilis (Cress.)	1	1	1	20
Ascogaster sp	3	1	1	19

Pseudexentera improbana (Wlk.)

Food plant: Hickory.
Occurrence: Melrose, Mass.
Totals received: One collection of 10 larvae.
Larvae: May and June.
Pupae: Late in June to spring.
Adults: April, May.
Parasites: None.

Pseudexentera sp. (var. of *improbana* Wlk. (?))

Food plant: Willow.
Occurrence: Burnham, Maine.
Total received: One collection 12 larvae.
Larvae: May and June.
Pupae: July, August.
Adults: August.
Parasites: None.

Epinotia similana (Hbn.)

Food plant: gray birch.
Occurrence: Maine and Massachusetts.
Totals received: Collections, 2; larvae, 6; years, 2.
Larvae: May and June.
Pupae: July–August.
Adults: August, September.
Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Actia sp	1	1	1	2

Epinotia nanana (Treits.)

Food plants: Norway, red, and white spruces.
Occurrence: Maine and Massachusetts.
Totals received: Collections, 19; larvae, 1,162; years, 4.
Larvae: July to spring.
Pupae: May, June, and July.
Adults: June and July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae† and pupae collected*
Agathis bicolor (Prov.)	33	3	10	820
Amblymerus verditer (Nort.)	6	1	2	135
Apanteles n. sp	6	1	3	235
Aphanogmus sp	1	1	1	50
Campoplex nanana Townes	34	3	8	625
Chelonus (*Microchelonus*) *shoshoneanorum* Vier	1	1	1	125
C. sp	9	2	7	540
Conostigmus sp	1	1	1	200
Copidosoma n. sp	71	3	9	825
Cremastus sp	1	1	1	100
Eubadizon sp	1	1	1	50
Eulophus sp	4	1	1	75
Gelis apantelis Cush	17	2	5	625
G. sp	2	1	1	200
G. tenellus (Say)	1	1	1	75
Habrocytus thyridopterigis How	2	1	1	200
Horogenes solenobiae (Ashm.)	3	1	1	125
Itoplectis 4-cingulatus (Prov.)	1	1	1	125
Lamprotatus sp	1	1	1	200
Neliopisthus piceae Cush	2	1	1	200
Phaeogenes epinotiae Cush	44	3	8	720
Pimpla aquilonia Cress	1	1	1	200
Pimplopterus recurvariae (Cush.)	6	2	3	425
Pteromalidae	3	2	2	225
Scambus hispae (Harr.)	1	1	1	200
Spilochalcis side (Wlk.)	1	1	1	75
Tetrastichus varicornis (Grlt.)	13	2	4	450

Epinotia lindana (Fern.)

Food plant: Flowering dogwood.
Occurrence: Melrose, Mass.
Totals received: One collection of 25 larvae.
Larvae: May to August.
Pupae: August, September.
Adults: September.
Parasites: None.

Anchylopera maritima (Dyar)

Food plant: Beach pea.
Occurrence: Rye, N. H.
Totals received: One collection of 10 larvae.
Larvae: May, June.
Pupae: July.
Adults: July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Microgaster n. sp	1	1	1	10

***Laspeyresia coniferana* Ratz.**

Food plant: Red pine (bark).
Occurrence: Cross River, N. Y.
Totals received: One collection of 4 larvae.
Larvae: Probably from August to spring.
Pupae: June.
Adults: Late in June and July.
Parasites: None.

***Laspeyresia youngana* (Kearf.)**

Food plant: Spruce (cones).
Occurrence: Groton, Vt.
Totals received: Two collections of infested cones.
Larvae: Summer to spring (hibernates in larval stage).
Pupae: April, May.
Adults: May–June.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae† collected*
Campoplex sp.	7	1	1	60
Tetrastichus n. sp. (?)	§1	1	1	60

***Carpocapsa pomonella* (L.) codling moth**

Food plant: Apple.
Occurrence: Massachusetts, Connecticut, and New Jersey.
Totals received: Collections, 5; larvae, 11; years, 5.
Larvae: June to following spring in the Northeastern States. Sometimes a partial second brood.
Pupae: Early spring. Hibernate as prepupal larvae.
Adults: May to July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Ichneumoninae (poor condition)	1	1	1	1

***Ecdytolopha insiticiana* Zell. locust twig borer**

Food plant: Black locust.
Occurrence: Rochester, Mass., and Kingston, N. H.
Totals received: Collections, 2; larvae,† about 15.
Larvae: May to November (hibernate as full grown larvae).
Pupae: July, August, and September, and April to June.
Adults, May and June, and July to October.
Parasites: None.

FAMILY TORTRICIDAE

***Adoxophyes furcatana* (Wlk.)**

Food plant: Sycamore.
Occurrence: Lancaster, Mass.
Totals received: Collection, 1; larvae, 20.
Larvae: May and June.
Pupae: June, July.
Adults: July and August.
Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Nemorilla floralis (Fall.)	1	1	1	20

Amorbia humerosana Clem.

Food plants: Willow, honeysuckle, ash, oak, poplar.
Occurrence: Massachusetts and Connecticut.
Totals received: Collections, 13; larvae, 28; years, 4.
Larvae: July to September.
Pupae: Fall to spring
Adults: Late in May, June.
Parasites: None.

Sparganothis pettitana (Rob.)

Food plants: Maple, basswood.
Occurrence: Maine and Massachusetts.
Totals received: Collections, 7; larvae, 37; years, 2.
Larvae: May and June.
Pupae: June and July.
Adults: Late in June to August.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Diptera:				
Larvaevoridae (unissued puparium)	1	1	1	7
Hymenoptera:				
Apanteles n. sp	7	2	3	20
Gelis obscurus (Cress.)	1	1	1	9
Phytodietus burgessi (Cress.)	1	1	1	9

Sparganothis reticulatana (Clem.)

Food plants: Apple, maple.
Occurrence: Bangor, Maine.
Totals received: Collections, 2; larvae, 2.
Larvae: June, July.
Pupae: Late in July and August.
Adults: August.
Parasites: None.

Pandemis albaniana (Wlk.)

Food plant: Honeysuckle (bush).
Occurrence: Melrose, Mass.
Total received: One collection of 2 larvae.
Larvae: May.
Pupae: June.
Adults: June.
Parasites: None.

Pandemis limitata (Rob.)

Food plant: Wild cherry.
Occurrence: Melrose, Mass.
Total received: One larva.
Larva: May.
Pupa: Late in May and June.
Adult: June.
Parasites: None.

Archips persicana (Fitch)

Food plant: Goldenrod.
Occurrence: Bangor, Maine.
Total received: One larva.
Larva: May.

Pupa: June.
Adult: June.
Parasites: None.

Archips infumatana (Zell.)

Food plant: Hickory.
Occurrence: New Hampshire and Massachusetts.
Totals received: Collections, 8; larvae,† 329; years, 7.
Larvae: May to July.
Pupae: Late in June and July.
Adults: July and August.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae† collected*
Diptera:				
Sturmia, near *strigata* (v.d.W.)	2	1	1	30
Hymenoptera:				
Exochus pallipes Cress	4	1	1	30
Itoplectis conquisitor (Say)	9	1	1	40
Labrorychus prismaticus (Nort.)	4	2	2	42
Macrocentrus cerasivoranae Vier	2	2	2	45

Archips fervidana (Clem.)

Food plant: Oak (mostly sprouts and scrub oak).
Occurrence: New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, and New Jersey.
Totals received: Collections, 79; larvae,† 5,798; years, 14.
Larvae: May to early in July.
Pupae: July and August.
Adults: July and August.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae† and pupae collected*
Diptera:				
Actia, near *pilipennis* (Fall.)	203	9	20	1, 839
Anachaetopsis tortricis (Coq.)	2	1	1	57
Dichaetoneura leucoptera John	39	5	8	632
Exorista mella (Wlk.)	2	2	2	98
Nemorilla floralis (Fall.)	42	8	14	1, 253
Zenillia blanda (O.S.)	254	11	33	2, 681
Hymenoptera:				
Agathis agilis (Cress.)	93	10	15	1, 553
Brachymeria ovata ovata (Say)	1	1	1	314
Chalcididae (unidentified)	28	2	5	452
Cryptus albitarsis albitarsis (Cress.)	1	1	1	140
Dibrachys cavus (Wlk.)	55	2	2	129
Exochus pallipes Cress	18	4	4	390
Horogenes parviformis (Vier.)	1	1	1	259
Itoplectis conquisitor (Say)	2	1	1	58
Labrorychus prismaticus (Nort.)	188	8	26	2, 813
Macrocentrus cerasivoranae Vier	198	11	27	3, 004
Perilampus fulvicornis Ashm	12	3	3	169

Archips cerasivorana (Fitch) ugly nest caterpillar

Food plants: Wild black cherry, chokecherry.
Occurrence: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Ohio.
Totals received: Collections, 77; larvae,† 12,446; years, 15.
Larvae: May to July.
Pupae: Late in June to early in September.
Adults: Early in July to September.
Generations: One (winter is passed in the egg stage).

Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae and pupae† collected
Actia sp. near *pilipennis* (Fall.)	392	8	23	1, 973
Anachaetopsis tortricis (Coq.)	2	2	2	1, 135
Compsilura concinnata (Meig.)	3	2	2	335
Dichaetoneura leucoptera John	878	9	27	6, 085
Nemorilla floralis (Fall.)	31	7	11	1, 399
Phorocera erecta Coq	3	1	2	87
P. tortricis Coq	6	2	3	372
Zenillia blanda (O.S.)	172	8	17	1, 666
Hymenoptera:				
Agathis agilis (Cress.)	168	10	13	4, 221
A. laticinctus (Cress.)	1	1	1	60
Amblymerus sp	12	1	1	155
Apanteles cacoeciae Riley	9	2	2	267
Dibrachys cavus (Wlk.)	26	2	2	430
Exochus albifrons Cress	3	1	1	100
E. pallipes Cress	59	7	14	5, 896
Horogenes parviformis (Vier.)	2	2	2	453
Itoplectis conquisitor (Say)	86	3	3	3, 060
Labrorychus prismaticus (Nort.)	394	10	46	7, 280
Macrocentrus cerasivoranae Vier	262	11	23	6, 022

Archips argyrospila (Wlk.) fruit tree leaf roller

Food plants: Apple, aspen, ash, oak, rhododendron, rose, sweet fern.

Occurrence: New Hampshire and Massachusetts.

Totals received: Collections, 13; larvae, 142; years, 8.

Larvae: May to July.

Pupae: June, July.

Adults: June, July to early in August.

Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Larvaevoridae (unidentified)	2	2	2	55
Nemorilla floralis (Fall.)	2	1	2	8
Phorocera erecta Coq	1	1	1	7
Phryxe vulgaris (Fall.)	1	1	1	42
Hymenoptera:				
Exochus pallipes Cress	1	1	1	25

Archips semiferana (Wlk.)

Food plant: Oak.

Occurrence: Massachusetts and Connecticut.

Totals received: Collections, 3; larvae, 78; years, 2.

Larvae: May, June.

Pupae: June.

Adults: June, early in July.

Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae and pupae collected
Aplomya caesar (Ald.)	6	1	1	25
Hymenoptera:				
Itoplectis conquisitor (Say)	4	1	1	25

Archips rosana (L.)

Food plants: Chokecherry, privet, rose.

Occurrence: Massachusetts.

Totals received: Collections, 14; larvae,† 788; years, 10.

Larvae: May and June.

Pupae: June, early in July.
Adults: June, July.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae and pupae† collected
Diptera:				
Actia interrupta Curr	2	1	1	75
Anachaetopsis tortricis (Coq.)	3	2	2	207
Aplomya caesar (Ald.)	1	1	1	145
Compsilurini, near *Lydinolydella* (?)	2	1	1	75
Nemorilla floralis (Fall.)	62	9	11	676
Phorocera erecta Coq	21	3	3	247
Hymenoptera:				
Apanteles polychrosidis Vier	1	1	1	40
A. sp. (cocoon)	1	1	1	5
Bracon politiventris (Cush.)	12	1	1	40
Glypta simplicipes Cress	4	2	2	125
Horismenus microgaster (Ashm.)	§6	1	1	40
Itoplectis conquisitor (Say)	18	3	4	224
Macrocentrus iridescens French	*16	1	1	50
Meteorus trachynotus Vier	2	1	1	132
Microgaster epagoges Gah	*16	3	3	135
Oncophanes americanus (Weed)	1	1	1	40
Phytodictus vulgaris Cress	1	1	1	132
Scambus sp	1	1	1	40

Archips purpurana (Clem.)

Food plants: Blackberry, wildcherry, goldenrod, house leek, sedum.
Occurrence: Maine, Vermont, and Massachusetts.
Totals received: Collections, 7; larvae, 45; years, 7.
Larvae: May to early in July.
Pupae: Late in June and July.
Adults: July.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae and pupae collected
Diptera:				
Aplomya caesar (Ald.)	1	1	1	25
Nemorilla floralis (Fall.)	3	1	1	25
Phorocera erecta Coq	1	1	1	1
Hymenoptera:				
Macrocentrus nigridorsis Vier	*17	1	1	3

Archips rosaceana (Harr.) oblique-banded leaf roller

Food plants: Apple, birch, cherry, crataegus, elm, hackberry, honeysuckle (bush), lilac, maple, rhododendron, willow.
Occurrence: Maine, Massachusetts, and Rhode Island.
Totals received: Collections, 17; larvae, 74; years, 7.
Larvae: August and September to June, and June to August.
Pupae: June, July, and August.
Adults: Late in June and July, and July to September.
Generations: Two.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae and pupae collected
Diptera:				
Nemorilla floralis (Fall.)	1	1	1	6
Phorocera erecta Coq	1	1	1	4
Hymenoptera:				
Apechthis ontario (Cress.)	1	1	1	20
Chalcid sp	2	1	1	9
Glypta simplicipes Cress	9	3	3	33
Macrocentrus iridescens French	*4	1	1	9

Archips conflictana (Wlk.) large aspen tortrix

Food plant: Aspen.
Occurrence: Maine and New Hampshire.
Totals received: Collections, 4; larvae and pupae, 98; years, 3. (Serious outbreaks were reported from Kilkenny, N. H., in 1931 and Kokadjo, Me., in 1930.)
Larvae: August to May and June.
Pupae: June.
Adults: June.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae, pupae, and moths collected
Diptera:				
Phryxe pecosensis (Towns.)	1	1	1	60
Hymenoptera:				
Agathis annulipes (Cress.)	1	1	1	60
Apechthis ontario (Cress.)	1	1	1	60
Glypta inversa Cress	2	1	1	32
Macrocentrus iridescens French	*29	1	1	60
Scambus hispae (Harr.)	1	1	1	60

Choristoneura fumiferana (Clem.) spruce budworm

Food plants: Balsam fir, spruce.
Occurrence: Massachusetts and Rhode Island.
Totals received: Collections, 8; larvae, 242; years, 6.
Larvae: July to following spring.
Pupae: June–July.
Adults: June and early in July.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae and pupae collected
Diptera:				
Nemorilla floralis (Fall.)	18	2	2	180
Phryxe vulgaris (Fall.)	1	1	1	90
Hymenoptera:				
Itoplectis conquisitor (Say)	6	1	1	90

Tortrix alleniana Fern.

Food plant: Spiraea.
Occurrence: Bangor, Maine.
Totals received: One collection of 15 larvae.
Larvae: May, June.
Pupae: Late in June, July.
Adults: July.
Parasites: None.

Argyrotaenia pinatubana (Kearf.) pine tube moth

Food plant: White pine.
Occurrence: Massachusetts.
Totals received: Collections, 4; larvae, 44; years, 2.
Larvae: June–July, and August–November.
Pupae: Fall to spring (May), and July–August.
Adults: May, and July–August.
Generations: Two.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae and pupae collected
Hymenoptera:				
Zaleptopygus sp	1	1	1	6

Argyrotaenia quercifoliana (Fitch)

Food plant: Oak.
Occurrence: Massachusetts and New York.
Totals received: Collections, 2; larvae, 12; years, 2.
Larvae: May–June.
Pupae: June.
Adults: Late in June–July.
Parasites: None.

Argyrotaenia juglandana (Fern.) hickory leaf roller

Food plant: Hickory.
Occurrence: Massachusetts.
Totals received: Collections, 4; larvae, 31; years, 3.
Larvae: May–June.
Pupae: June–July.
Adults: Late in June, July.
Parasites: None.

Argyrotoxa semipurpurana (Kearf.)

Food plant: Oak. (A local outbreak was observed in June 1940 at Wallingford, Conn. Five acres of oak woodland were nearly stripped of foliage.)
Occurrence: Connecticut and New York.
Totals received: Collections, 2; larvae, 19; years, 2.
Larvae: May and June.
Pupae: June.
Adults: June, early in July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae and pupae collected*
Dimmockia incongrua (Ashm.) [1]	12	1	1	17
Phaeogenes mellinus (Prov.)	3	1	1	17

[1] Gregarius. May act as a primary parasite, or as a hyperparasite.

Acleris variana (Fern.)

Food plants: Spruce.
Occurrence: New Hampshire, Vermont, and Massachusetts.
Totals received: Collections, 3; larvae, 8; years, 3.
Larvae: March to July.
Pupae: July.
Adults: July, August.
Parasites: None.

Acleris nivisellana (Wlshm.)

Food plant: Apple.
Occurrence: Hampden, Maine.
Totals received: One collection of 3 larvae.
Larvae: July–August.
Pupae: September.
Adults: September.
Parasites: None.

FAMILY PHALONIIDAE

***Phalonia rutilana* (Hbn.)**

Food plant: Juniper.
Occurrence: Southport and Waldoboro, Maine.
Totals received: Collections, 3; larvae,† 95; years, 2.
Larvae: May–June.
Pupae: June–July.
Adults: June to early in July. This species was common to abundant on common juniper in 1930 and 1931 in the vicinity of Southport and Waldoboro, Me. Foliage was badly browned.)
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae† collected*
Agathis bicolor (Prov.)	2	1	1	70
Chelonus (*Microchelonus*) sp	13	1	1	70
Copidosoma n. sp	†24	2	2	80
Macrocentrus sp	1	1	1	70
Zaleptopygus sp	2	1	1	70

FAMILY COSSIDAE

***Zeuzera pyrina* (L.)** **leopard moth**

Food plants: Apple, ash, lilac, locust, maple.
Occurrence: Eastern Massachusetts and Rhode Island.
Totals received: Collections, 7; larvae and pupae, 7; years, 5.
Larvae: Larval period extends through 2 summer seasons.
Pupae: May to September.
Adults: May to September.
Life cycle: Nearly 2 years.
Parasites: None.

FAMILY COSMOPTERYGIDAE

***Chrysoclista linneella* (Clerck)**

Food plant: European linden.
Occurrence: Long Island, N. Y.
Totals received: Collections, 2; larvae, 7; years, 2.
Larvae: From summer to following spring.
Pupae: May–June.
Adults: Late in May and June.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Microplitis sp. (?)	8	1	1	Unknown [1]

[1] Larvae are bast miners. They were not removed for counting.

FAMILY GELECHIIDAE

***Recurvaria juniperella* Kearf.**

Food plant: Juniper (common).
Occurrence: Southport and Winterport, Maine. Larvae associated with *Phalonia rutilana* Hbn.
Totals received: Two collections.
Larvae: July or August through to following spring.
Pupae: May, June.

Adults: June–early July.
Parasites: None.

Recurvaria robiniella (Fitch)

Food plant: Black locust.
Occurrence: Kingston, N. H.
Totals received: One collection of about 25 larvae.†
Larvae: August to spring.
Pupae: May, June–July.
Adults: June and July.
Parasites: None.

Recurvaria apicitripunctella (Clem.)

Food plant: Hemlock.
Occurrence: Beverly and Jamaica Plains, Mass.
Totals received: Collections, 6; larvae,† few hundred; years, 3.
Larvae: August to spring (hibernates in larval stage).
Pupae: June–July.
Adults: June–July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae*[1] *collected*
Alegina sp	4	1	1	?
Copidosoma n. sp	*(2)	2	4	?
Derostenus silvia (Grlt.)	2	1	1	?
Eubadizon gracile Prov	2	1	2	?
Eulophus sp	[3] 6	2	2	?
Habrocytus thyridopterigis How	7	1	1	?
Macrocentrus sp	1	1	1	?

[1] Only 1 collection of 100 larvae was counted.
[2] Many; gregarious. As many as 12 specimens from 1 host larva. In one collection of 100 larvae, 31 were parasitized by *Copidosoma*.
[3] Six larvae were parasitized by an external feeding Eulophid.

Recurvaria piceaella Kearf.

Food plant: Spruce.
Occurrence: Maine and Massachusetts.
Totals received: Collections, 4; larvae; years, 4.
Larvae: July to spring (hibernates in larval stage).
Pupae: June.
Adults: June, early July.
Parasites: Total found when 100 larvae were dissected.

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Agathis sp	1	1	1	100
Braconid sp	1	1	1	100
Campoplex sp	25	1	1	100

Exoteleia pinifoliella (Chamb.) pine needle miner

Food plants: Pitch pine, red pine (and other hard pines).
Occurrence: Maine and Massachusetts.
Totals received: Collections, 12; larvae,§ about 3,300; years, 7.
Larvae: Late in July and August to spring, hibernating in larval stage.
Pupae: June–July.
Adults: June–July. (Often locally abundant; sometimes over extensive areas.)

Parasites:

Hymenoptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae† collected
Alegina pinifoliae (Cush.)	5	2	3	1, 225
Apanteles n. sp	11	2	3	375
A. paralechiae Mues	47	5	7	2, 150
Chelonus sp	1	1	1	75
Closterocerus tricinctus (Ashm.)	3	1	1	150
Copidosoma n. sp	*1, 200+	6	7	2, 375
Derostenus silvia (Grlt.)	*20+	3	4	1, 725
Eulophus sp	8	2	2	625
Habrocytus sp	12	1	1	500
Haltichella xanticles (Wlk.)	2	1	1	150
Horismenus microgaster (Ashm.)	2	1	1	150
(?) *Melittobia* sp	1	1	1	200
Pimplopterus parvus (Cress.)	2	2	2	300
Spilochalcis side (Wlk.)	8	3	4	1, 750
Sympiesis guttatipennis (Grlt.)	5	1	2	1, 100
S. n. sp	4	1	1	75
Tetrastichus marylandensis (Grlt.)	1	1	1	750
T. sp	2	2	2	500
Zagrammosoma interlineatum (Grlt.)	33	3	3	700

Telphusa sp.

Food plant: Bayberry.
Occurrence: Brewster, Mass.
Totals received: One collection of 7 larvae.
Larvae: May–June.
Pupae: Late in June and July.
Adults: July.
Parasites: None.

Telphusa sp.

Food plant: Swamp white oak.
Occurrence: Kingston, N. H.
Totals received: One collection of about 35 larvae.†
Larvae: August–September. (Larvae were very abundant in 1931 over about 5 acres, skeletonizing the foliage of swamp white oak.)
Pupae: Fall to spring.
Adults: June.
Parasites: None.

Chionodes fondella (Busck)

Food plant: Everlasting (flowers).
Occurrence: Newfields, N. H.
Totals received: One small collection of about 10 larvae.†
Larvae: August–September.
Pupae: Fall to spring.
Adults: June.
Parasites: None.

Filatima serotinella (Busck)

Food plant: Wild cherry.
Occurrence: Manchester, Conn.
Totals received: One collection of 5 larvae.
Larvae: July–August.
Pupae: August to June.
Adults: June–July.
Parasites: None.

Filatima pseudoacaciella (Chamb.)

Food plant: Black locust.
Occurrence: Melrose, Mass.
Totals received: One larva.
Larva: June–July.
Pupa: July–August.
Adult: August.
Generations: Apparently two.
Parasites: None.

Gnorimoschema sp.

Food plant: Gray birch.
Occurrence: Maine, New Hampshire, and Massachusetts.
Totals received: Collections, 5; larvae, 185; years, 4.
Larvae: August, September, and October.
Pupae: Fall to spring.
Adults: June.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Diptera:				
Actia sp.	2	1	1	140
Frontiniella parancilla Towns.	10	2	2	157
Hymenoptera:				
Macrocentrus n. sp.	17	1	1	140

Gnorimoschema gallaesolidaginis (Riley)

Food plant: Goldenrod.
Occurrence: Melrose, Mass.
Totals received: Two collections of 8 larvae and pupae.
Larvae: Gall forming, June to August.
Pupae: August.
Adults: September.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae and pupae collected*
Hymenoptera:				
Copidosoma gelechiae gelechiae How.	*4	2	2	8

Anacampsis rhoifructella (Clem.)

Food plant: *Viburnum dentatum.*
Occurrence: Massachusetts.
Totals received: Collections, 3; larvae,† 125; years, 3.
Larvae: May–June.
Pupae: July.
Adults: July to early in August.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae† collected*
Hymenoptera:				
Apanteles sp. (cocoons)	2	1	1	55
Campoplex infumatus (Prov.)	5	1	1	40
Copidosoma n. sp.	*(1)	2	2	95
Cremastus forbesi Weed	5	1	1	40
Microgaster epagoges Gah.	4	1	1	40
Phaeogenes n. sp.	1	1	1	55

[1] Many; gregarious: 5 larvae in one collection of 40 were killed by this parasite; 236 adults emerged.

***Anacampsis tristrigella* Wlshm.**

Food plant: Hazelnut.
Occurrence: Winchester, Mass.
Totals received: One collection of 3 larvae.
Larvae: May–June.
Pupae: July.
Adults: July and early in August.
Parasites: None.

***Anacampsis innoculella* (Zell.)**

Food plant: Aspen.
Occurrence: Maine, Massachusetts, and New Jersey.
Totals received: Collections, 8; larvae, 855; years, 5.
Larvae: May and June.
Pupae: June, July.
Adults: June–July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Apanteles polychrosidis Vier	61	2	2	697
Copidosoma n. sp	*5	1	1	75
Eulophus sp	1	1	1	622
Exochus sp	4	2	2	85
Glypta rufiscutellaris Cress	3	1	1	622
Horogenes montanus (Ashm.)	1	1	1	622

***Thelyasceta nonstrigella* (Chamb.)**

Food plant: Wild aster.
Occurrence: Brewer, Maine.
Totals received: One collection of 2 larvae.
Larvae: May.
Pupae: Late in May–June.
Adults: June.
Parasites: None.

***Dichomeris marginella* (F.) juniper webworm**

Food plant: Juniper (mostly ornamentals).
Occurrence: Maine, Massachusetts, Connecticut, and New Jersey.
Totals received: Collections, 7; larvae, 227; years, 7.
Larvae: April to June.
Pupae: June–July.
Adults: June–July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Agathis acrobasidis (Cush.)	1	1	1	35
A. n. sp	39	3	3	155
Bracon n. sp	9	2	2	120
Campoplex sp	2	1	1	60
Hyposoter sp	1	1	1	35
Pimpla aequalis Prov	4	1	1	20
Tetrastichus coerulescens Ashm	1	1	1	60

***Trichotaphe levisella* Fyles**

Food plant: Weed (species not known).
Occurrence: Oldtown, Maine.
Totals received: One collection of 17 larvae.
Larvae: May to July.
Pupae: Late in July–August.
Adults: August.
Parasites: None.

Machimia tentoriferella Clem.

Food plants: Wild cherry, mountain-ash, maple, oak, plum.
Occurrence: Maine, Massachusetts, and New Jersey.
Totals received: Collections, 10; larvae, 19; years, 4.
Larvae: June to August.
Pupae: Late in August, September.
Adults: Late in August and September.
Parasites: None.

Depressaria heracliana (L.) parsnip webworm

Food plant: Parsnip (mostly escaped from cultivation).
Occurrence: Maine, Vermont, Massachusetts, Connecticut, and New Jersey.
Totals received: Collections, 41; larvae, 3,870; years, 10.
Larvae: May to early in August.
Pupae: July to September.
Adults: Late in July to September.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Diptera:				
Dichaetoneura leucoptera John	13	2	5	685
Larvaevoridae (unidentified)	2	2	2	135
Nemorilla floralis (Fall.)	40	3	12	1,312
Xanthoernestia sp	2	2	2	446
Hymenoptera:				
Apanteles depressaria Mues	39	4	6	492
Ascogaster argentifrons (Prov.)	1	1	1	80
Campoplex validus (Cress.)	2	2	2	116
Cremastus forbesi Weed	1	1	1	150
Lampronota sesiavora (Rohw.)	4	2	3	663
Therion sassacus Vier	1	1	1	46

Agonopterix atrodorsella (Clem.)

Food plant: Coreopsis.
Occurrence: Dover, Mass.
Totals received: One collection of 45 larvae.
Larvae: June–July.
Pupae: August.
Adults: August.
Parasites: None.

Agonopterix arcuella Clarke

Food plant: St. Johnswort.
Occurrence: Orrington, Maine.
Totals received: One collection of 10 larvae.
Larvae: May–June.
Pupae: July.
Adults: July.
Parasites: None.

Agonopterix robiniella (Pack.)

Food plant: Black locust.
Occurrence: West Roxbury and Melrose, Mass.
Totals received: Two collections totaling 21 larvae.
Larvae: May–June.
Pupae: July.
Adults: July.
Parasites: None.

Psilocorsis reflexella Clem.

Food plant: Oak.
Occurrence: Saugus, Mass., and Melvin, N. H.
Totals received: Two collections totaling 68 larvae.
Larvae: July to September.
Pupae: Fall to spring.
Adults: Late in May and June.
Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Larvaevoridae (unissued puparium)	1	1	1	42
Plectops sp., near *usitata* Coq. (n?)	1	1	1	42

Psilocorsis faginella (Chamb.)

Food plant: Beech.
Occurrence: Maine.
Totals received: Collections, 4; larvae, 79; years, 2.
Larvae: July to September.
Pupae: Fall to May and June.
Adults: Late May to early in July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Horogenes sp	1	1	1	60
Labrorychus prismaticus Nort	3	1	1	60
Phytodietus burgessi Cress	2	1	1	60

FAMILY STENOMIDAE

Stenoma algidella (Wlk.)

Food plant: Yellow birch.
Occurrence: Cranberry Lake, N. Y.
Total received: One collection of 1 larva.
Larva: July–August.
Pupa: Late August to June.
Adult: June.
Parasites: None.

Stenoma querciella (Busck)

Food plant: Oak.
Occurrence: Melrose, Mass.
Totals received: Two collections totaling 2 larvae.
Larvae: June–July.
Pupae: July.
Adults: July.
Parasites: None.

FAMILY GLYPHIPTERYGIDAE

Anthophila pariana (Clerck) apple and thorn skeletonizer

Food plant: Apple.
Occurrence: Maine, New Hampshire, Massachusetts, and Connecticut.
Totals received: Collections, 11; larvae and pupae, 362; years, 6.
Larvae: June to August and September.

Pupae: Late in June, July, August, and September.
Adults: June to September.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae and pupae collected
Diptera:				
Nemorilla floralis (Fall.)	8	2	4	244
Hymenoptera:				
Campoplex sp	1	1	1	18
Horogenes sp	1	1	1	87
Itoplectis conquisitor (Say)	3	1	1	87
Oncophanes betulae Mues	*7	1	1	30
Phaeogenes parvus (Prov.)	11	1	1	87
Scambus hispae (Harr.)	3	2	2	204
Triclistus brunnipes (Cress.)	10	2	3	169

FAMILY AEGERIIDAE

Aegeria apiformis (Clerck) hornet moth

Food plant: Carolina poplar (roots).
Occurrence: Revere, Mass.
Totals received: Two collections totaling 33 larvae.
Larvae: Two-year life cycle, July through to May of second year. Passes second winter as prepupal larva in cocoon.
Pupae: May–June.
Adults: June.
Parasites: None.

Sanninoidea exitiosa (Say) peach tree borer

Food plant: Prunus.
Occurrence: Dedham, Mass.
Totals received: One collection of 3 larvae.
Larvae: August to June.
Pupae: Late in June and July.
Adults: July.
Parasites: None.

Melittia cucurbitae (Harris) squash borer

Food plant: Squash.
Occurrence: Brockton and Melrose, Mass.
Totals received: Four collections totaling 59 larvae.
Larvae: June to September.
Pupae: Prepupal larvae or pupae, fall to spring.
Adults: June–July.
Parasites:

	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae' collected
Diptera:				
Muscidae (unidentified)	4	1	2	15
Muscina assimilis (Fall.)	2	1	1	30

FAMILY HELIODINIDAE

Schreckensteinia festaliella (Hbn.)

Food plant: Blackberry.
Occurrence: Melrose, Mass.
Totals received: One collection of 25 larvae.
Larvae: June–July.

Pupae: Late in July and August.
Adults: August.
Parasites:

Hymenoptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Apanteles sp	2	1	1	25

FAMILY PLUTELLIDAE

Harpipteryx xylostella (L.) European honeysuckle leaf roller

Food plant: Bush honeysuckle.
Occurrence: Maine, New Hampshire, Massachusetts, and Rhode Island.
Totals received: Collections, 6; larvae, 427; years, 4.
Larvae: May–June.
Pupae: June–July.
Adults: Late in June and July.
Parasites:

Diptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae collected
Larvaevoridae (unidentified)	1	1	1	20
Hymenoptera:				
Macrocentrus iridescens French	*8	1	1	100
Meteorus sp. (unissued cocoon)	1	1	1	250

FAMILY YPONOMEUTIDAE

Argyresthia thuiella (Pack.) arborvitae leaf miner

Recurvaria thujaella Kearf.

Mixed collection.
Food plants: Arborvitae.
Occurrence: Wakefield, Mass.
Totals received: One collection of about 20 larvae.†
Larvae: Mid-summer to following May.
Pupae: June.
Adults: June.
Parasites:

Hymenoptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae† collected
Apanteles sp	2	1	1	20
Copidosoma n. sp	*1	1	1	20
Microgaster zonaria (Say)	1	1	1	20

FAMILY COLEOPHORIDAE

Coleophora cretaticostella Clem.

Food plant: Blackberry.
Occurrence: Melrose, Mass.
Totals received: One collection of 60 larvae.
Larvae: August to following July.
Pupae: July.
Adults: Late in July.
Parasites: None.

Coleophora limosipennella Dup. elm casebearer

Food plant: Elm.
Occurrence: Vermont and Massachusetts.
Totals received: Collections, 4; larvae and pupae, 122; years, 3.
Larvae: August to following July.
Pupae: July–August.
Adults: July–August.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae and pupae collected*
Apanteles sp. (cocoons)	3	1	1	10
Habrocytus thyridopterigis How.	8	1	1	82
Hypopteromalus sp. (Ex *Apanteles*)	1	1	1	10

Coleophora fletcherella Fern. cigar casebearer

Food plants: Apple and pear.
Occurrence: Maine, New Hampshire, and Massachusetts.
Totals received: Collections, 5; larvae, 51; years, 3.
Larvae: July and August to following June.
Pupae: June–July.
Adults: Late in June and July.
Parasites: None.

Coleophora laricella Hbn. larch casebearer

Food plant: Larch. (*C. laricella* is an introduced species that often causes serious defoliation of larch.)
Occurrence: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, and New Jersey.
Totals received: Collections, 87; larvae,† 27,381; years, 14.
Larvae: July to following May.
Pupae: May–June.
Adults: June.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae† collected*
Agathis bicolor (Prov.)	2	2	2	1,000
A. pumilis (Ratz.)	3	1	2	1,000
A. sp.	5	1	3	1,250
Apanteles n. sp.	3	2	3	8,693
Bracon juncicola Ashm.	11	3	7	2,200
B. pygmaeus Prov.	76	5	20	5,190
Campoplex rufipes (Prov.)	8	2	3	1,100
Chrysocharis laricinellae (Ratz.)	14	4	7	2,600
Derostenus silvia (Grlt.)	22	3	4	1,100
Dibrachys sp.	1	1	1	220
Dimmockia sp.	2	1	1	200
Elachertus sp.	1	1	1	200
Euderus cushmani (Cwfd.)	117	7	30	11,321
Eulophidae	3	1	2	850
Eulophus magnisulcatus Grlt.	3	1	2	400
Eurydinota lividicorpus Grlt.	7	1	1	1,036
Eurytoma sp.	1	1	1	500
Gelis obscurus (Cress.)	1	1	1	200
G. tenellus (Say)	39	5	14	5,198
Habrocytus thyridopterigis How.	204	6	32	11,221
Haltichella xanticles (Wlk.)	1	1	1	200
Horismenus microgaster (Ashm.)	6	1	2	400
Horogenes sp.	105	6	28	8,650
Ichneumonini	2	2	2	1,000
Itoplectis 4-cingulata (Prov.)	2	2	2	400
Pimplopterus sp.	1	1	1	100

Hymenoptera (Continued):	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae† collected
Pteromalidae	1	1	1	10
Rogas sp	1	1	1	505
Scambus hispae (Harr.)	3	2	2	700
Spilochalcis side (Wlk.)	135	6	23	8, 150
Tetrastichus xanthops (Ratz.)	13	1	1	200
T. sp	17	3	3	2, 830

Coleophora pruniella Clem. cherry casebearer

Food plant: Cherry.
Occurrence: Arlington, Mass.
Totals received: One collection of 70 larvae.
Larvae: August to following June.
Pupae: July.
Adults: July.
Parasites: None.

FAMILY GRACILLARIIDAE

Lithocolletis fragilella F. & B.

Food plant: Honeysuckle.
Occurrence: Melrose, Mass.
Totals received: One collection of 40 larvae.
Larvae: Late in May to early in July (leaf miners).
Pupae: July, and July to May.
Adults: July and May.
Generations: Apparently a partial second generation, as moths issued in July and a few in May of the next year.
Parasites: None.

Lithocolletis cincinnatiella (Chamb.) gregarious oak leaf miner

Food plant: White oak.
Occurrence: Melrose, Mass. (in 1919), and Dover, Mass. (in 1933).
Totals received: Two collections containing several infested leaves
Larvae: May–July, and probably late summer.
Pupae: July–August, and fall to spring.
Adults: Late in July and August. Occasionally abundant locally.
Parasites:

Hymenoptera:	Parasite specimens	Years recovered	Collections yielding parasite	Host larvae† and pupae collected
Horismenus violaceus (Ashm.)	[1] 18	1	1	504
Paraleurocerus bicoloripes Grlt	16	1	1	504
Sympiesis nigrifemora Ashm	1	1	1	504
Zagrammosoma interlineatum Grlt	2	1	1	504

[1] From 18 infested leaves, 404 parasitic hymenoptera emerged, of which the above species are representatives, and from which 61 moths issued. Three infested leaves examined July 26, 1933, contained the following: 45 living larvae, 22 parasitized larvae, and 16 pupae; an average of 28 larvae per leaf.

Garcilaria syringella (F.) lilac leaf miner

Food plant: Lilac.
Occurrence: Melrose and Pittsfield, Mass.
Totals received: Collections, 3; larvae, 75; years, 3.
Larvae: June and July and August to October.
Pupae: June–July, and September to May.
Adults: May and July.
Parasites: None.

Bedellia somnulentella (Zell.)

Food plant: Morning glory.
Occurrence: Wakefield, Mass.
Total received: One collection of 40 larvae.
Larvae: August–September (leaf miners).
Pupae: October.
Adults: October.
Generations: Apparently two.
Parasites: None.

Bucculatrix packardella Chamb.

Food plants: American beech, European beech.
Occurrence: Quincy, Mass.
Totals received: One collection of 30 larvae and pupae.
Larvae: May and June.
Pupae: June.
Adults: June to early in July.
Generations: Apparently two.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Pnigalio maculipes (Cwfd.)	2	1	1	30

Bucculatrix pomifoliella Clem.

Food plant: Apple.
Occurrence: St. Albans, Maine, and Hardwick, Mass.
Totals received: Two collections totaling 17 pupae.
Larvae: July to September.
Pupae: Fall to spring.
Adults: May and June.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host pupae collected*
Gelis sp	1	1	1	16

Bucculatrix canadensisella Chamb. birch skeletonizer

Food plants: Gray birch, yellow birch. (Outbreaks of this species occasionally affect extensive areas.)
Occurrence: Maine, New Hampshire, Vermont, and Massachusetts; and St. John, N. B.
Totals received: Collections, 22; larvae,† many hundreds; years, 8.
Larvae: July to September.
Pupae: Fall to spring.
Adults: Late in May to early in July.
Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae collected*
Bucculatriplex bucculatricis (Ashm.)	34	4	10	320
Pleurotropis bucculatricis Gah	§2	1	1	25

Bucculatrix ainsliella Murt. oak skeletonizer

Food plant: Red oak (in outbreaks many other species of deciduous trees also are attacked). The oak skeletonizer appears occasionally in epidemics over rather large areas.

Occurrence: Massachusetts and New York.

Totals received: Collections, 5; larvae,† many hundreds; years, 3.

Larvae: June–July, and September–October.

Pupae: Fall to spring, and July–August.

Adults: May, and late in July and early in August.

Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae† collected*
Bucculatriplex bucculatricis (Ashm.)	1	1	1	142
Chrysocharis n. sp	2	1	1	250
Cirrospilus cinctithorax (Grlt.)	1	1	1	250
C. flavicinctus Riley	23	1	2	400
Eurytoma solenozopheriae Ashm	3	1	2	400
Pnigalio maculipes (Cwfd.)	130	1	2	300

FAMILY PSYCHIDAE bagworm

Thyridopteryx ephemeraeformis (Haw.)

Food plants: Apple, arborvitae, basswood, bayberry, cedar, wild cherry, hackberry, black locust, honey locust, maple, poplar, sassafras, sycamore, willow.

Occurrence: Massachusetts, New York, New Jersey, Pennsylvania, Maryland, Delaware, and Missouri.

Totals received: Collections, 38; larvae, 3,205 bags; years, 14.

Larvae: June, July, August, and September.

Pupae: August, September, and October.

Adults: September and October.

Hibernation: Eggs within bag.

Parasites:

Diptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Host larvae and pupae collected*
Anachaetopsis (*Hypostena*) *tortricis* (Coq.)	2	2	2	367
Larvaevoridae (maggot)	1	1	1	105
Phorocera claripennis Macq	10	5	7	982
Zenillia blanda (O. S.)	3	2	2	252
Hymenoptera:				
Brachymeria ovata ovata (Say)	2	1	1	91
Habrocytus thyridopterigis How	3	1	1	91
Ichneumonini	1	1	1	58
Itoplectis conquisitor (Say)	90	8	13	1, 093
Phobetes thyridopteryx (Riley)	7	3	4	450

Eurukuttarus confederata (Grt.)

Food plants: Wild cherry, privet.

Occurrence: Massachusetts and New Jersey.

Totals received: Collections, 6; larvae, 190 bags; years, 5.

Larvae: July to following spring.

Pupae: June–July.

Adults: June–July.

Parasites:

Hymenoptera:	*Parasite specimens*	*Years recovered*	*Collections yielding parasite*	*Number of bags*
Pimola aequalis Prov	2	1	2	37
Spilochalcis side (Wlk.)	1	1	1	2

***Fumaria casta* (Pall.)**

Food plants: Lichens and mosses. (The species has also been found feeding on the European beech scale (*Cryptococcus fagi*).)
Occurrence: Boston and Brookline, Mass.
Totals received: Collections, 3; larvae and pupae, 85; years, 3.
Larvae: July to following spring.
Pupae: June–July
Adults: Late in June–July.
Parasites:

	Parasite specimens	*Years recovered*	*Collections yielding parasite*	*Host larvae and pupae collected*
Hymenoptera:				
Dibrachys cavus (Wlk.)	4	1	1	18

FAMILY TINEIDAE

***Monopis crocicapitella* (Clem.)**

Food plants: Refuse and possibly peat moss in breeding jars.
Occurrence: In laboratory at Melrose Highlands, Mass., in 1930–31.
Larvae: June, July–August (a casebearer).
Pupae: Apparently from fall to spring.
Adults: Late in May and in August.
Parasites: None.

FAMILY INCURVARIIDAE

***Paraclemensia acerifoliella* (Fitch)** **maple leaf cutter**

Food plant: Sugar maple.
Occurrence: Vermont and New York.
Totals received: Collections, 6; larvae, † several hundred; years, 5.
Larvae: June to September.
Pupae: Fall to spring.
Adults: May.
Parasites: None.

Parasite-Host List

Diptera

FAMILY MUSCIDAE

***Muscina assimilis* (Fall.)**

Host: *Melittia cucurbitae* (Harris).
Localities: Brockton and Melrose, Mass.
Adults: September.
Number per host: Gregarious.
Generations: At least two.
Hibernation: Puparium in soil.

FAMILY BOMBYLIIDAE

***Systropus macer* Loew**

Host: *Lithacodes fasciola* (H.-S.)
Locality: Saybrook, Conn.
Adults: June.

Number per host: One.
Generations: At least two.
Hibernation: Puparium (?).

FAMILY LARVAEVORIDAE (TRACHINIDAE)

***Achaetoneura* sp.**

Host: *Pyrausta signatalis* (Wlk.)
Locality: Melrose, Mass.
Adults: August.
Number per host: One.
Generations: At least two.
Hibernation: Not determined.

***Achaetoneura spectabilis* (Ald.)**

Host: *Tetralopha robustella* Zell.
Localities: Concord, N. H.; Dover and Melrose, Mass.
Adults: July and August.
Number per host: One.
Generations: One.
Hibernation: In host cocoon.

***Actia interrupta* Curr.**

Host: *Archips rosana* (L.).
Locality: Melrose, Mass.
Adults: July.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Actia,* near *pilipennis* (Fall.)**

Hosts: *Archips cerasivorana* (Fitch), *A. ferridana* (Clem.).
Localities: Many in Maine, Vermont, Massachusetts, and Rhode Island.
Adults: May and June.
Number per host: One or more.
Generations: One.
Hibernation: In puparium.

***Actia* sp.**

Host: *Epinotia similana* (Hbn.).
Locality: Chelmsford, Mass.
Adults: July.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Actia* sp.**

Host: *Episimus argutanus* Clem.
Localities: Beverly, Revere, Roxbury, Mass.; and Moultonboro, N. H.
Adults: Late May and June, July.
Number per host: One.
Generations: Two.
Hibernation: In puparium.

***Actia* sp.**

Host: *Gnorimoschema* sp.
Locality: Melrose, Mass.
Adults: May.
Number per host: One.
Generations: Probably two.
Hibernation: In puparium.

***Anachaetopsis tortricis* (Coq.)**

Hosts: *Archips cerasivorana* (Fitch), *A. fervidana* (Clem.), *A. rosana* (L.), *Thyridopteryx ephemeraeformis* (Haw.).
Localities: Bangor, Me.; Newport, N. H.; Ayer and Melrose, Mass.; Bridgewater and Plainfield, N. J.
Adults: July, August, and September.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Anaporia limacodis* (Towns.)**

Hosts: *Lithacodes fasciola* (H.-S.), *Sisyrosea textula, Tortricidia flexuosa* (Grt.).
Locality: Ledyard and Saybrook, Conn.
Adults: June.
Number per host: One.
Generations: One.
Hibernation: In puparium.

***Anaporia pristis* (Wlk.)**

Hosts: *Lagoa crispata* Pack., *Phobetron pithecium* (A. & S.).
Localities: Middleboro, Mass.; Thompson, Conn.
Adults: June.
Number per host: One.
Generations: One.
Hibernation: In puparium.

***Anaporia* sp.**

Host: *Sisyrosea textula* (H.-S.).
Locality: Saybrook, Conn.
Adults: June.
Number per host: One.
Generations: Unknown.
Hibernation: In puparium.

***Aphria ocypterata* Towns.**

Host: *Salebria semiobscurella* Hulst.
Locality: York, Maine.
Adults: (spring) (April under laboratory conditions).
Number per host: One.
Generations: Possibly two.
Hibernation: In host pupa (?).

***Aplomya caesar* (Ald.)**

Hosts: *Archips purpurana* (Clem.), *A. rosana* (L.), *A. semiferana* (Wlk.).
Localities: Hartford, Vt.; and Malden and Newton, Mass.
Adults: June, July.
Number per host: One.

Generations: At least two.
Hibernation: Not recorded.

***Chaetexorista javana* B. & B.**

Host: *Cnidocampa flavescens* (Wlk.).
Localities: Boston and suburbs, Mass.
Adults: Late in July and August.
Number per host: One.
Generations: One.
Hibernation: As a maggot in host prepupal larva.

***Compsilura concinnata* (Meig.)**

Hosts: Many macrolepidoptera; also *Archips cerasivorana* (Fitch), *Cnidocampa flavescens* (Wlk.), *Evergestis straminalis* (Hbn.), *Lagoa crispata* Pack.‡, *Oidaematophorus homodactylus* (Wlk.).
Localities: Recoveries from New England, New York, New Jersey, and Pennsylvania.
Adults: May, June, July, August, and September.
Number per host: One to five.
Generations: Two to four.
Hibernation: As maggot in host prepupa or pupa.

Compsilurini, near *Lydinolydella* sp. (?)

Host: *Archips rosana* (L.).
Locality: Melrose, Mass.
Adults: July.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Dichaetoneura leucoptera* John.**

Hosts: *Archips cerasivorana* (Fitch), *A. fervidana* (Clem.), *Depressaria heracliana* (L.).
Localities: Many throughout New England, New York, and New Jersey.
Adults: July, August, and September.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Exorista larvarum* (L.) (=*Tachina mella* Wlk.)[2]**

Hosts: Many macrolepidoptera; also *Archips fervidana* (Clem.).
Localities: New England, New York, New Jersey, and Pennsylvania.
Adults: May, and June to October.
Number per host: Usually 1 or 2, though as many as 11 recorded.
Generations: Two or three.
Hibernation: As maggot in host larva or pupa.

[2] Introduced sp. (par. of gypsy and brown-tail moths—*E. Larvarum* (L.) Native sp.—*E. mella* (Wlk.). Adults cannot yet be distinguished, unfortunately. For a long time the two have been regarded as one species, but there is evidence in biology to separate them in the mature stages.

***Frontiniella parancilla* Towns.**

Host: *Gnorimoschema* sp.
Localities: Melrose and Wakefield, Mass.
Adults: June.
Number per host: One.
Generations: One.
Hibernation: In host pupa.

***Leskiomima tenera* (Wied.)**

Hosts: *Macrobotys pertextalis* (Led.), *Tetralopha* sp., near *asperatella* (Clem.).‡
Localities: Parlin Pond, Maine; and Ayer, Bedford, and Melrose, Mass.
Adults: June and July.
Number per host: One.
Generations: At least two.
Hibernation: In host pupa.

***Lispidea palpigera* Coq.**

Host: *Acrobasis comptoniella* Hulst.
Locality: Barrington, N. H.
Adults: August.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Lixophaga mediocris* Ald.**

Hosts: *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.).
Localities: Jericho, N. Y.; and Dennis, N. J.
Adults: Late in June and July.
Number per host: One.
Generations: Probably two.
Hibernation: Not recorded.

***Lixophaga plumbea* Ald.**

Host: *Pyrausta futilalis* (Led.).
Localities: Atkinson, N. H.; Dover and Lancaster, Mass.; and Hillsboro, Skillman, and White House, N. J.
Adults: Late in July and August.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Metopiops* n. sp. (?) near *pyralidis* (Coq.)**

Host: *Tetralopha asperatella* (Clem.).
Locality: Wakefield, Mass.
Adults: July.
Number per host: One.
Generations: Probably two.
Hibernation: (?) Puparium formed in host cocoon.

***Nemorilla floralis* (Fall.) (=*N. maculosa* Meig.)**

Hosts: *Acrobasis caryivorella* Rag., *A. comptoniella* Hulst, *A. coryliella* Dyar, *Adoxophyes furcatana* (Wlk.), *Anthophila pariana* (Clerck), *Archips argyrospila* (Wlk.), *A. cerasivorana* (Fitch), *A. fervidana* (Clem.), *A. purpurana* (Clem.), *A. rosaceana* (Harr.) *A. rosana* (L.), *Choristoneura fumiferana* (Clem.), *Depressaria heracliana* (L.), *Episimus argutanus* (Clem.), *Exartema sericoranum* Wlshm., *Phlyctaenia tertialis* (Guen.)‡, *Pyrausta futilalis* (Led.), *P. signatalis* (Wlk.), *Rhyacionia buoliana* (Schiff.), *Salebria subcaesiella* (Clem.), *Spilonota ocellana* (D. & S.), *Tetralopha asperatella* (Clem.).‡

Localities: Many in New England, New York, and New Jersey.
Adults: Late in June, July, August, September, and October.
Number per host: One.
Generations: Two or more.
Hibernation: As maggot in host.

***Oxynops anthracina* (Big.)**

Hosts: *Oidaematophorus homodactylus* (Wlk.), *O. monodactylus* (L.).
Localities: Melrose, Mass., and Garrison, N. Y.
Adults: June–July.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Phorocera claripennis* Macq.**

Hosts: *Lagoa crispata* Pack., *Thyridopteryx ephemeraeformis* (Haw.).
Localities: Manchester, Conn.; Bridgewater, Hightstown, Plainfield, Somerville, South River, N. J.; and Milford, Del.
Adults: April, May, August, September, and October.
Number per host: One or more.
Generations: Two or three.
Hibernation: In puparium.

***Phorocera erecta* Coq.**

Hosts: *Archips argyrospila* (Wlk.), *A. cerasivorana* (Fitch), *A. purpurana* (Clem.), *A. rosaceana* (Harr.), *A. rosana* (L.), *Episimus argutanus* (Clem.), *Macrobotys pertextalis* (Led.), *Pantographa limata* G. & R., *Phlyctaenia tertialis* (Guen.), *Pyrausta futilalis* (Led.), *P. signatalis* (Wlk.).

Localities: Many in Maine, New Hampshire, Vermont, Massachusetts, New Jersey, and Pennsylvania.
Adults: June, July, August, and September.
Number per host: One.
Generations: At least two.
Hibernation: In puparium.

***Phorocera longiuscula* (Wlk.)**

Hosts: *Phobetron pithecium* (A. & S.), *Sibine stimulae* (Clem.).
Localities: New Britain, Conn.; and Franklin Township, N. J.
Adults: August.
Number per host: One.
Generations: One.
Hibernation: As maggot in prepupal larva of host.

***Phorocera tortricis* Coq.**

Host: *Archips cerasivorana* (Fitch).
Localities: Canaan, Dover, Newport, N. H.; Windsor, Vt.; and Arlington, Athol, Ayer, and Melrose, Mass.
Adults: July.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Phryxe pecosensis* (Towns.)**

Hosts: *Archips conflictana* (Wlk.), *Salebria subcaesiella* (Clem.).
Localities: Kokadjo and Waterboro, Maine.
Adults: June-July, October.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Phryxe vulgaris* (Fall.)**

Hosts: *Archips argyrospila* (Wlk.), *Choristoneura fumiferana* (Clem.), *Evergestis straminalis* (Hbn.).
Localities: Beverly and Melrose, Mass.
Adults: May, June, and July to October.
Number per host: One, occasionally two.
Generations: Two or more.
Hibernation: As maggot in pupa of host.

***Phyllomya* sp., near *aenea* Coq.**

Host: *Pyrausta futilalis* (Led.).
Localities: Several (6) in New Jersey.
Adults: July-August, and September.
Number per host: One to three.
Generations: At least two.
Hibernation: As maggot in pupa of host.

***Plectops* sp., near *usitata* Coq.**

Host: *Psilocorsis reflexella* Clem.
Locality: Melvin, N. H.
Adults: June.
Number per host: One.
Generations: At least two.
Hibernation: In puparium (?).

***Pseudochaeta siminina* Rein.**

Host: *Macrobotys pertextalis* (Led.).
Locality: Bedford, Mass.
Adults: August.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Pseudosiphona brevirostris* (Coq.)**

Host: *Oidaematophorus homodactylus* (Wlk.).
Locality: Wakefield, Mass.
Adults: June-July.
Number per host: One.
Generation: At least two.
Hibernation: Not recorded.

***Schizotachina convecta* Wlk.**

Host: *Acrobasis comptoniella* Hulst.
Locality: Kennebunk, Maine.
Adults: August.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Sturmia* sp., near *strigata* (v. d. W.)**

Host: *Archips infumatana* (Zell.).
Locality: Melrose, Mass.
Adults: July.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Tachinophyto floridensis* (Towns.)**

Host: *Oidaematophorus homodactylus* (Wlk.).
Locality: Wakefield, Mass.
Adults: June-July.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Xanthoernestia* sp.**

Host: *Depressaria heracliana* (L.).
Localities: Manchester, Vt.; and Princeton, N. J.
Adults: August.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Zenillia blanda* (O.S.)**

Hosts: *Archips cerasivorana* (Fitch), *A. fervidana* (Clem.), *Salebria semiobscurella* Hulst ‡, *S. subcaesiella* (Clem.), *Tetralopha robustella* Zell., *Thyridopteryx ephemeraeformis* (Haw.). (Also see Misc. Pub. 188.)

Localities: Many in New England, New York, and New Jersey.

Adults: Late in May, June, July, August, and September-November.

Number per host: One (generally).
Generations: Two.
Hibernation: Maggot in pupa of host.

***Zenillia euchaetiae* Sellers [3]**

Host: *Pyrausta futilalis* (Led.).
Localities: Bound Brook and Somerville, N. J.
Adults: June to September.
Number per host: One.
Generations: One or two.
Hibernation: In pupa of host. (*Cycnia tenera* Hbn., *C. inopinatus* Hy. Edw., *Euchaetias egle* Dru.).

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[3] *Z. ceratomiae* Coq. of authors, in part. Also see U. S. Dept. Agr. Misc. Pub. 188, 1934.

Nematodes

Hosts: *Oidaematophorus homodactylus* (Wlk.), *Acrobasis betulella* Hulst.
Locality: Oldtown, Maine; and Melrose, Mass.
Emergence from host: July.
Number per host: One.
Generations: Probably one.
Hibernation: Not recorded.

Hymenoptera

FAMILY BRACONIDAE

Subfamily Euphorinae

***Meteorus dimidiatus* (Cress.)**
Host: *Macrobotys pertextalis* (Led.).
Locality: Saugus, Mass.
Adults: June.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Meteorus hyphantriae* Riley**
Hosts: *Macrobotys pertextalis* (Led.), *Trichoptilus lobidactylus* (Fitch).
Locality: Medford and Natick, Mass., and Armonk, N. Y.
Adults: Late June and July.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Meteorus indagator* (Riley)**
Hosts: *Acrobasis betulella* Hulst, *A. comptoniella* Hulst.
Localities: Many in Maine and Massachusetts.
Adults: July.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Meteorus loxostegei* Vier.**
Hosts: *Phlyctaenia tertialis* (Guen.), *Pyrausta futilalis* (Led.).
Localities: Bangor, Maine, and several localities in New Jersey.
Adults: August and September.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

***Meteorus niveitarsis* (Cress.)**
Hosts: *Acrobasis betulella* Hulst, *A. comptoniella* Hulst.
Localities: Kennebunk, Maine, and Williamstown, Mass.
Adults: July.
Number per host: One.
Generations: At least two.
Hibernation: In cocoon.

***Meteorus* sp.**
Host: *Macrobotys pertextalis* (Led.).
Locality: Melrose, Mass.
Adults: July.
Number per host: One.
Generations: Possibly three.
Hibernation: Not recorded.

***Meteorus trachynotus* Vier.**
Hosts: *Archips rosana* (L.), *Episimus argutanus* (Clem.).
Localities: Melrose and Roxbury, Mass.
Adults: July–August.
Number per host: One.
Generations: At least two.
Hibernation: Not recorded.

Subfamily Macrocentrinae

***Macrocentrus ancylivorus* Roh.**
Host: *Exartema sericoranum* Wlshm.
Locality: Westerly, R. I.
Adults: July.
Number per host: One.

***Macrocentrus cerasivoranae* Vier.**
Hosts: *Archips cerasivorana* (Fitch), *A. fervidana* (Clem.), *A. infumatana* (Zell.).
Localities: Many in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, and New Jersey.
Adults: Mid-July and August.
Number per host: One.
Generations: Probably two.
Hibernation: Not recorded.

***Macrocentrus delicatus* Cress.**
Host: *Episimus argutanus* (Clem.).
Localities: Revere, Roxbury, and Wakefield, Mass.
Adults: July–August, and October.
Number per host: One.
Generations: Two, possibly three.
Hibernation: Not recorded.

***Macrocentrus exartemae* Walley**
Host: *Exartema valdanum* McD.
Localities: Bangor and Orrington, Maine.
Adults: Late in July.
Number per host: Gregarious.

***Macrocentrus instabilis* Mues.**
Host: *Acrobasis betulella* Hulst.
Localities: Bangor, Maine, and Acton, Mass.
Adults: July.
Number per host: One.
Generations: Probably two.
Hibernation: Not recorded.

***Macrocentrus iridescens* French**

Hosts: *Archips conflictana* (Wlk.), *A. rosaceana* (Harr.), *A. rosana* (L.), *Harpipteryx xylostella* (L.), *Macrobotys pertextalis* (Led.).
Localities: Kokadjo, Maine; Newport, N. H.; and Forest Hills, Hudson, and Melrose, Mass.
Adults: Late in June and July.
Number per host: Gregarious.
Generations: At least two.

***Macrocentrus* n. sp.**

Host: *Gnorimoschema* sp.
Locality: Melrose, Mass.
Adults: May.
Number per host: One (?).
Generations: At least two.
Hibernation: In cocoon.

***Macrocentrus nigridorsis* Vier.**

Host: *Archips purpurana* (Clem.).
Locality: Brewer, Maine.
Adults: July.
Number per host: Gregarious.

***Macrocentrus pyraustae* Vier.**

Host: *Macrobotys pertextalis* (Led.).
Localities: Bedford, Mass.; Hermon, Maine; and Hillsboro, N. J.
Adults: July and August.
Number per host: Gregarious.
Generations: At least two.

***Macrocentrus* sp.**

Host: *Phalonia rutilana* (Hbn.).
Locality: Waldoboro, Maine.
Adults: June.
Number per host: One.

***Macrocentrus* sp.**

Host: *Recurvaria apicitripunctella* (Clem.).
Locality: Beverly, Mass.
Adults: June.
Number per host: One.

Subfamily Blacinae

***Eubadizon gracile* Prov.**

Host: *Recurvaria apicitripunctella* (Clem.).
Locality: Beverly, Mass.
Adults: June.
Number per host: One.
Generations: Unknown.

***Eubadizon* sp.**

Host: *Epinotia nanana* (Treits.).
Locality: Newagen, Maine.
Adults: June.
Number per host: One.

***Orgilus obscurator* (Nees)**

Host: *Rhyacionia buoliana* (Schiff.).

Localities: Brookline and Wakefield, Mass.; Middletown and Newport, R. I.; and Branford and Easton, Conn.

Adults: Late June and July.

Number per host: One.

Generations: One.

Hibernation: In host larva.

***Orgilus* sp.**

Host: *Acrobasis caryivorella* Rag.

Locality: Manchester, Conn.

Adults: July.

Number per host: One.

***Microtypus* n. sp.**

Hosts: *Acrobasis betulella* Hulst, *A. comptoniella* Hulst.

Localities: Kenduskeag, Maine; and North Andover, Mass.

Adults: June and July.

Number per host: One.

Generations: Unknown.

SUBFAMILY AGATHIDINAE

***Cremnops montrealensis* (Morr.)**

Host: *Evergestis straminalis* (Hbn.).

Localities: Ellsworth, Houlton, Mattawamkeag, Maine; and Beverly, Mass.

Adults: June and July, and August and September.

Number per host: One.

Generations: Two.

Hibernation: In host pupa (?).

***Agathis acrobasidis* (Cush.)**

Host: *Dichomeris marginella* (F.).

Locality: North Abington, Mass.

Adults: July.

Number per host: One.

Generations: At least two.

***Agathis agilis* (Cress.)**

Hosts: *Archips cerasivorana* (Fitch), *A. fervidana* (Clem.), *Spilonota ocellana* (D. & S.).

Localities: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Ohio.

Adults: July and August.

Number per host: One.

Generations: At least two.

***Agathis annulipes* (Cress.)**

Host: *Archips conflictana* (Wlk.).

Locality: Kokadjo, Maine.

Adults: Late June and July.

Number per host: One.

Generations: At least two.

***Agathis bicolor* (Prov.)**

Hosts: *Coleophora laricella* Hbn., *Epinotia nanana* (Treits.), *Petrova comstockiana* (Fern.), *Phalonia rutilana* (Hbn.).
Localities: Maine, New Hampshire, and Massachusetts.
Adults: Late in June and July.
Number per host: One.
Generations: At least two.

***Agathis calcaratus* (Cress.)**

Hosts: *Acrobasis betulella* Hulst, *A. caryivorella* Rag., *A. comptoniella* Hulst, *Exartema permandanum* Clem., *E. sericoranum* Wlshm.
Localities: Maine, New Hampshire, Massachusetts, Rhode Island, and Connecticut.
Adults: Late in June to August.
Number per host: One.
Generations: At least two.

***Agathis laticinctus* (Cress.)**

Host: *Archips cerasivorana* (Fitch).
Locality: Windham, N. Y.
Adults: July.
Number per host: One.
Generations: Probably two.

***Agathis* n. sp.**

Hosts: *Dichomeris marginella* (F.), *Rhyacionia buoliana* (Schiff.).
Localities: Boxford, North Abington, Winthrop, Mass.; and York, Maine.
Adults: June and July.
Number per host: One.
Generations: At least two.

***Agathis pini* Mues.**

Hosts: *Petrova comstockiana* (Fern.), *Rhyacionia frustrana* (Comst.).
Locality: Nantucket, Mass.
Adults: July.
Number per host: One.
Generations: Probably two.

***Agathis pumilis* (Ratz.)**

Host: *Coleophora laricella* Hbn.
Localities: Sidney, Maine, and Saranac, N. Y.
Adults: July.
Number per host: One.
Generations: Probably two.

***Agathis sanctus* (Say)**

Host: *Macrobotys pertextalis* (Led.).
Locality: Bedford, Mass.
Adults: July.
Number per host: One.
Generations: Probably two.

Apanteles cacoeciae **Riley**

Hosts: *Archips cerasivorana* (Fitch), *Exartema valdanum* McD.
Localities: Ayer, Mass., and Newport, N. H.
Adults: July.
Number per host: Gregarious (3 to 6 cocoons).
Generations: At least two.

Apanteles depressariae **Mues.**

Host: *Depressaria heracliana* (L.).
Localities: Maine, Vermont, Massachusetts, and New Jersey.
Adults: July and August.
Number per host: One.

Apanteles empretiae **Riley**

Host: *Lithacodes fasciola* (H.–S.).
Localities: Melrose and Revere, Mass.
Adults: July and August.
Number per host: Gregarious (7 to 10 cocoons).
Generations: One.
Hibernation: Cocoons.

Apanteles harrisinae **Mues.**

Host: *Harrisina americana* (Guer.).
Locality: Putnam, Conn.
Adults: Late in July.
Number per host: (?).
Generations: One.
Hibernation: Cocoons.

Apanteles **n. sp.**

Hosts: *Acrobasis betulella* Hulst, *Sparganothis pettitana* (Rob.).
Localities: Hermon and Kenduskeag, Maine; and Peterboro, N. H.
Adults: June.
Number per host: One.

Apanteles **n. sp.**

Host: *Coleophora laricella* Hbn.
Localities: Sidney, Maine; and Berlin, N. H.
Adults: Late in May.
Number per host: One.

Apanteles **n. sp.**

Host: *Epinotia nanana* (Treits.).
Localities: Boothbay, Maine; and Dedham, Mass.
Adults: June and July.
Number per host: One.

Apanteles **n. sp.**

Host: *Exoteleia pinifoliella* (Chamb.).
Localities: Lunenburg, Melrose, and Sherborn, Mass.
Adults: June and July.
Number per host: One.
Generations: One.
Hibernation: In host larva.

***Apanteles* n. sp. (near *acaudus* Prov.)**

Host: *Meroptera pravella* (Grt.).
Locality: Rockport, Mass.
Adults: Late in July and August.
Number per host: No record made as to whether cocoons were singly or in a group.
Generations: Probably one.

***Apanteles* n. sp.**

Host: *Phlyctaenia* sp. (on poplar and willow).
Localities: Waterboro, Maine; and Dover, Mass.
Adults: July and late in August and September.
Number per host: Gregarious.
Generations: At least two.

***Apanteles* n. sp. (?)**

Host: *Pterophorus periscelidactylus* Fitch.
Locality: Melrose, Mass.
Adults: June.
Number per host: One.
Generations: Probably two.

***Apanteles paralechiae* Mues.**

Host: *Exoteleia pinifoliella* (Chamb.).
Localities: Many in Massachusetts.
Adults: July.
Number per host: One.
Generations: One.
Hibernation: In host larva.

***Apanteles polychrosidis* Vier.**

Hosts: *Anacampsis innoculella* (Zell.), *Archips rosana* (L.).
Localities: Kokadjo, Maine; Melrose, Mass.; and Morristown, N. J.
Adults: June.
Number per host: One.
Generations: Probably two.

***Apanteles pterophori* Mues.**

Host: *Oidaematophorus homodactylus* (Wlk.).
Locality: Melrose, Mass.
Adults: Late June and July.
Number per host: One.
Generations: Probably two.

***Apanteles pyraustae* Vier.**

Host: *Pyrausta futilalis* (Led.).
Localities: Many in Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, and New Jersey.
Adults: June and July–August.
Number per host: Gregarious (5 to 10 per host).
Generations: Two.
Hibernation: Cocoons.

***Apanteles schaffneri* Mues.**

Host: *Parasa* sp.
Locality: Roycefield, N. J.; and Raubsville, Pa.
Adults: July to August, and August to September.
Number per host: From 4 to 20.
Generations: At least two.

***Apanteles* sp.**

Host: Leaf miners on arborvitae (*Argyresthia* or *Recurvaria*).
Locality: Wakefield, Mass.
Adults: June.
Number per host: One.
Generations: Unknown.

***Apanteles* sp.**

Host: *Anacampsis rhoifructella* (Clem.).
Locality: Melrose, Mass.
Adults: Cocoons, no adults.

***Apanteles* sp.**

Host: *Macrobotys pertextalis* (Led.).
Localities: Melrose and Saugus, Mass.
Adults: Cocoons parasitized by secondaries.
Number per host: One.

***Apanteles* sp.**

Host: *Schreckensteinia festaliella* (Hbn.).
Locality: Melrose, Mass.
Adults: August.
Number per host: One.
Generations: At least two.

***Apanteles* sp.**

Host: *Sibine stimulea* (Clem.).
Locality: Franklin Township, N. J.
Adults: July.
Generations: One.
Hibernation: Cocoon.

***Apanteles* sp.**

Host: *Udea rubigalis* (Guen.).
Locality: Reading, Mass. (In greenhouse.)
Adults: No adults issued.
Number per host: Four cocoons in groups of two.

***Microgaster epagoges* Gah.**

Hosts: *Anacampsis rhoifructella* (Clem.), *Archips rosana* (L.), *Rhyacionia frustrana* (Comst.).
Localities: Melrose and Nantucket, Mass.
Adults: Late June and July.
Number per host: One.
Generations: At least two.

***Microgaster harnedi* Mues.**

Host: *Macrobotys pertextalis* (Led.).
Locality: Bedford, Mass.
Adults: July.
Number per host: One.
Generations: At least two.

***Microgaster* n. sp.**

Host: *Anchylopera maritima* (Dyar).
Locality: Rye, N. H.
Adults: July.
Number per host: One.
Generations: Probably two.

***Microgaster* sp.**

Host: *Exartema exoletum* Zell.
Locality: Oldtown, Maine.
Adults: Late in June.
Number per host: One.
Generations: Probably two.

***Microgaster zonari* (Say)**

Hosts: Leaf miners on arborvitae (*Argyresthia* or *Recurvaria*).
Locality: Wakefield, Mass.
Adults: June.
Number per host: One.
Generations: Unknown.

***Microplitis* n. sp.**

Host: *Acrobasis comptoniella* Hulst.
Locality: Kennebunk, Maine.
Adults: August.
Number per host: One.
Generations: Unknown.

***Microplitis* sp.**

Host: *Chrysoclista linneella* Clerck.
Locality: Westbury, N. Y.
Adults: June.
Number per host: One.
Generations: Unknown.

Subfamily Cheloninae

***Phanerotoma tibialis* Hald.**

Host: *Acrobasis betulella* Hulst.
Localities: Bangor and Hermon, Maine.
Adults: July.
Number per host: One.
Generations: One.
Hibernation: In host. (U. S. Dept. Agr., Agr. Monog. 2, 1951, p. 142, under Cheloninae.)

***Ascogaster argentifrons* (Prov.)**
Host: *Depressaria heracliana* (L.).
Locality: Peapack, N. J.
Adults: August.
Number per host: One.
Generations: Unknown.

***Ascogaster* sp.**
Host: *Spilonota ocellana* (D. & S.).
Locality: Portland, Maine.
Adults: Late in June and July.
Number per host: One (?).
Generations: One.
Hibernation: In host larva.

***Chelonus* (*Microchelonus*) *egregicolor* Vier.**
Host: *Pyrausta futilalis* (Led.).
Localities: Pelham, N. H.; Dover, Mass.; and Bound Brook, Martinsville, Skillman, Somerville, and White Horse, N. J.
Adults: July, August, and September.
Number per host: One.
Generations: Two.
Hibernation‡: In host cocoon of *Apanteles pyraustae* Vier.

***Chelonus* (*Microchelonus*) miscellaneous species§**
Hosts: *Epinotia nanana* (Treits.), *Exoteleia pinifoliella* (Chamb.), *Phalonia rutilana* (Hbn.), *Taniva albolineana* (Kearf.).
Localities: Several localities in Maine; and in Dedham, Spencer, and Sudbury, Mass.
Adults: Late in May, June, and July.
Number per host: One.
Generations: Probably one.
Hibernation: In host.

***Chelonus* (*Microchelonus*) *shoshoneanorum* Vier.**
Host: *Epinotia nanana* (Treits.).
Locality: Pemaquid, Maine.
Adults: July.
Number per host: One.
Generations: Probably one.
Hibernation: In host larva.

Subfamily Braconinae

***Bracon gelechiae* Ashm.**
Hosts: *Pterophorus periscelidactylus* Fitch, *Pyrausta signatalis* (Wlk.), *Rhyacionia buoliana* (Schiff.).
Localities: Melrose and Waltham, Mass.; and Rockland, N. Y.
Adults: June and August.
Number per host: Gregarious (as many as 6 per host).
Generations: Two or more.

***Bracon gemmaecola* (Cush.)**
Host: *Rhyacionia frustrana* (Comst.).
Localities: Nantucket, Mass.; and Dennis, N. J.
Adults: Late in May and June.

Number per host: One.
Generations: At least two.

***Bracon juncicola* Ashm.**

Host: *Coleophora laricella* Hbn.
Localities: Sydney, Maine; Berlin and Durham, N. H.; Middlesex, Vt.; and Arlington and Lunenburg, Mass.
Adults: June.
Number per host: One.
Generations: At least two.

***Bracon* n. sp.**

Host: *Dichomeris marginella* (F.).
Localities: York, Maine; and Boxford, Mass.
Adults: Late in June and July.
Number per host: One.
Generations: Two (?).

***Bracon politiventris* (Cush.)**

Hosts: *Archips rosana* (L.), *Rhyacionia buoliana* (Schiff.).
Localities: Brookline and Melrose, Mass.
Adults: June.
Number per host: One.
Generations: Two (?).

***Bracon pygmaeus* Prov.**

Host: *Coleophora laricella* Hbn.
Localities: Corinth, Sydney, Winthrop, Maine; Berlin, Durham, N. H.; Middlesex, Sharon, Vt.; Lunenburg, Melrose, North Andover, Stockbridge, Mass.; Woodstock, Conn.; and Greenfield, N. Y.
Adults: June.
Number per host: One.
Generations: At least two.

***Bracon variabilis* (Prov.)**

Host: *Acrobasis caryivorella* Rag.
Locality: Branford, Conn.
Adults: Late June–July.
Number per host: One.
Generations: At least two.

Subfamily Rogadinae

Tribe Rogadini

***Rogas* sp.**

Host: *Coleophora laricella* Hbn.
Locality: Lunenburg, Mass.
Adults: May.
Number per host: One.
Generations: Unknown.

***Bucculatriplex bucculatricis* (Ashm.)**

Host: *Bucculatrix ainsliella* Murt., and *B. canadensisella* Chamb.
Localities: Several in Maine; Hinesburg, Vt.; Boxford, Mass.; and Hague, N. Y.
Adults: Late in May to early in July.
Number per host: One.
Generations: One.
Hibernation: In host larval case.

***Oncophanes americanus* (Weed)**

Hosts: *Archips rosana* (L.), *Endothemia hebesana* (Wlk.).
Localities: Beverly and Melrose, Mass.
Adults: June, July, and August.
Number per host: One.
Generations: At least two.

***Oncophanes betulae* Mues.**

Host: *Anthophila pariana* (Clerck), and *Macrobotys pertextalis* (Led.).
Localities: Ellsworth and Glenburn, Maine.
Adults: Late in June and July.
Number per host: Gregarious (as many as 7 cocoons in a mass).
Generations: At least two.

FAMILY ICHNEUMONIDAE

Subfamily Pimplinae

Tribe Ephialtini

***Scambus hispae* (Harr.)**

Hosts: *Acrobasis betulella* Hulst, *Anthophila pariana* (Clerck), *Archips conflictana* (Wlk.), *Coleophora laricella* Hbn., *Dioryctria zimmermani* (Grt.), *Epinotia nanana* (Treits.), *Episimus argutanus* (Clem.), *Rhyacionia buoliana* (Schiff.).
Localities: Boothbay and Kokadjo, Maine; Middletown, R. I.; Middlefield, Conn.; Williamsville, N. Y.; and many localties in Massachusetts.
Adults: Late June, July, August, and September.
Number per host: One.
Generations: At least two.
Hibernation: In host cocoon.

***Scambus pterophori* (Ashm.)**

Host: *Endothenia hebesana* (Wlk.).
Locality: Medford, Mass.
Adults: July.
Number per host: One.
Generations: Unknown.

***Scambus* sp. (miscellaneous)**

Hosts: *Acrobasis comptoniella* Hulst, *Archips rosana* (L.), *Rhyacionia frustrana* (Comst.).
Localities: Maynard, Melrose, Nantucket, Mass.
Adults: Late in June and July.
Number per host: One.
Generations: Unknown.

***Calliephialtes comstockii* (Cress.)**

Hosts: *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.), *R. rigidana* Fern.
Localities: Several in Massachusetts, Connecticut, and New York.
Adults: May, June, and July.
Number per host: One.
Generations: At least two.
Hibernation: Cocoon in larval or pupal cell of host.

***Ephialtes pterelas* (Say)**

Host: *Rhyacionia buoliana* (Schiff.).
Locality: Middletown, R. I.
Adults: June.
Number per host: One.
Generations: Probably two.

Tribe Pimplini

***Pimpla aequalis* Prov.**

Hosts: *Dichomeris marginella* (F.), *Eurukuttarus confederata* (Grt.), *Rhyacionia buoliana* (Schiff.).
Localities: Berlin, Conn.; Matinecock, N. Y.; and Plainfield and Somerville, N. J.
Adults: June and July.
Number per host: One.
Generations: Two.
Hibernation: In host pupa.

***Pimpla aquilonia* Cress.**

Host: *Epinotia nanana* (Treits.).
Locality: Boothbay, Maine.
Adults: July.
Number per host: One.
Generations: Two.
Hibernation: In host pupa.

***Apechthis ontario* (Cress.)**

Hosts: *Archips conflictana* (Wlk.), *A. rosaceana* (Harr.).
Localities: Kokadjo, Maine; and Bedford, Mass.
Adults: June–July.
Number per host: One.
Generations: Two.
Hibernation: In host pupa.

***Itoplectis conquisitor* (Say)**

Hosts: *Acrobasis comptoniella* Hulst, *Anthophila pariana* (Clerck), *Archips cerasivorana* (Fitch), *A. fervidana* (Clem.), *A. infumatana* (Zell.), *A. rosana* (L.), *A. semiferana* (Wlk.), *Choristoneura fumiferana* (Clem.), *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.), *Thyridopteryx ephemeraeformis* (Haw.).
Localities: Many from New England to Delaware and Pennsylvania.
Adults: May, June, July, August, September, and October.
Number per host: One.
Generations: Two or more.
Hibernation: In host pupa.

***Itoplectis 4-cingulatus* (Prov.)**

Hosts: *Coleophora laricella* Hbn., *Epinotia nanana* (Treits.).
Localities: Southport, Maine; Durham, N. H.; and Sharon, Vt.
Adults: June.
Number per host: One.
Generations: Two or more.
Hibernation: Probably in host pupa.

Tribe Phytodietini

***Phytodietus burgessi* (Cress.)**

Hosts: *Acrobasis betulella* Hulst, *A. coryliella* Dyar, *Psilocorsis faginella* (Chamb.), *Sparganothis pettitana* (Rob.), *Tetralopha*, near *asperatella* (Clem.).
Localities: Aurora, Hermon, Jackman, Maine; and Melrose, Wakefield, Wellesley, Mass.
Adults: June and July.
Number per host: One.
Generations: At least two.
Hibernation: In cocoon.

***Phytodietus* n. sp.**

Host: *Exartema exoletum* Zell.
Locality: Oldtown, Maine.
Adults: Late in June and July.
Number per host: One.
Generations: At least two.

***Phytodietus pulcherrimus* (Cress.)**

Hosts: *Acrobasis betulella* Hulst, *Phlyctaenia tertialis* (Guen.).
Localities: Calais, Fort Fairfield, St. John, Van Buren, Maine; and Wellesley, Mass.
Adults: Late in June and July.
Number per host: One.
Generations: At least two.
Hibernation: In cocoon.

***Phytodietus vulgaris* Cress.**

Host: *Archips rosana* (L.).
Locality: Melrose, Mass.
Adults: July.
Number per host: One.
Generations: At least two.
Hibernation: Probably in cocoon.

Tribe Eclytini

***Neliopisthus piceae* Cush.**

Host: *Epinotia nanana* (Treits.).
Locality: Boothbay, Maine.
Adults: Late in June and July.
Number per host: One.
Generations: Unknown.

Tribe Hemitelini

***Alegina pinifoliae* (Cush.)**

Host: *Exoteleia pinifoliella* (Chamb.).
Localities: Belchertown, Lunenburg, and Plymouth, Mass.
Adults: June.
Number per host: One.
Generations: Unknown.
Hibernation: In host.

***Alegina* sp.**

Host: *Recurvaria apicitripunctella* (Clem.).
Locality: Beverly, Mass.
Adults: June.
Number per host: One.
Generations: Unknown.

***Phobetes thyridopteryx* (Riley)**

Host: *Thyridopteryx ephemeraeformis* (Haw.).
Localities: Harrington, Del.; and Plainfield and Trenton, N. J.
Adults: July–August.
Number per host: One.
Generations: Two, possibly more.

***Gelis apantelis* Cush.**

Host: *Epinotia nanana* (Treits.).
Localities: Boothbay, Bristol, Orr's Island, Pemaquid, Southport, Maine.
Adults: June and July.
Number per host: One or more.
Generations: Two or more.
Hibernation: In host cocoons. Often a hyperparasite.

***Gelis obscurus* (Cress.) §**

Hosts: *Coleophora laricella* Hbn.
Localities: Hermon, Maine; and Stockbridge, Mass.
Adults: July.
Number per host: One.
Generations: Unknown.
Often a hyperparasite. Reared from cocoon of *Apanteles canarsiae* Ashm., which was a primary parasite of *Sparganothis pettitana* Rob.

***Gelis* sp.**

Host: *Acrobasis comptoniella* Hulst.
Locality: North Andover, Mass.
Adults: August.
Number per host: One.
Generations: Unknown.

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***Gelis* sp.**

Host: *Bucculatrix pomifoliella* Clem.
Locality: St. Albans, Maine.
Adults: Date of emergence not recorded.
Number per host: One.
Generations: Unknown.

***Gelis tenellus* (Say)**

Hosts: *Coleophora laricella* Hbn., *Epinotia nanana* (Treits.).
Localities: Orr's Island and Winthrop, Maine; Durham, N. H.; Middlesex, Vt.; Woodstock, Conn.; Greenfield, N. Y.; and several localities in Massachusetts.
Adults: June to September.
Number per host: One.
Generations: One to four. (Muesebeck, C. F. W. and Dohanian, S. M., 1927. U. S. Dept. Agr., Dept. Bul. 1487: 12–14.)
Hibernation: In host.

Tribe Cryptini

***Cryptus albitarsis albitarsis* (Cress.)**

Hosts: *Acrobasis comptoniella* Hulst, *Archips fervidana* (Clem.).
Localities: Kennebunk, Maine; and Patchogue, N. Y.
Adults: July and August.
Number per host: One.
Generations: At least two.

***Mesostenus thoracicus* Cress.**

Host: *Acrobasis betulella* Hulst.
Locality: Williamstown, Mass.
Adults: July–August.
Number per host: One.
Generations: At least two.

Subfamily Ichneumoninae

Tribe Phaeogenini

***Phaeogenes epinotiae* Cush.**

Host: *Epinotia nanana* (Treits.).
Localities: Boothbay, Bristol, Newagen, Ocean Point, Orr's Island, Pemaquid, and Southport, Maine.
Adults: June and July.
Number per host: One.
Generations: At least two.

***Phaeogenes hebrus* (Cress.)**

Host: *Macrobotys pertextalis* (Led.).
Locality: Beverly, Mass.
Adults: July.
Number per host: One.
Generations: At least two.

***Phaeogenes mellinus* (Prov.)**

Host: *Argyrotoxa semipurpurana* (Kearf.).
Locality: Wallingford, Conn.
Adults: July.
Number per host: One.
Generations: Probably two or more.

***Phaeogenes* n. sp.**

Host: *Anacampsis rhoifructella* (Clem.).
Locality: Melrose, Mass.
Adults: July.
Number per host: One.
Generations: At least two.

***Phaeogenes parvus* (Prov.)**

Host: *Anthophila pariana* (Clerck).
Locality: Bath, Maine.
Adults: September.
Number per host: One.
Generations: At least two.

***Phaeogenes* sp. (*phycidis* Ashm.?)**

Host: *Acrobasis comptoniella* Hulst.
Localities: Kennebunk, Maine; and North Andover, Mass.
Adults: July and August.
Number per host: One.
Generations: At least two.

Tribe Ichneumonini

Host: *Coleophora laricella* Hbn.
Locality: Greenfield, N. Y.
Adults: June and early in July.
Number per host: One.
Generations: At least two.

Subfamily Lissonotinae

Tribe Glyptini

***Glypta canadensis* Cress.**

Host: *Exartema valdanum* McD.
Locality: Bucksport, Maine.
Adults: Late in June.
Number per host: One.
Generations: At least two.

***Glypta erratica* Cress.**

Host: *Macrobotys pertextalis* (Led.).
Locality: Saugus, Mass.
Adults: August.
Number per host: One.
Generations: At least two.

***Glypta inversa* Cress.**

Host: *Archips conflictana* (Wlk.).
Locality: Kokadjo, Maine.
Adults: Late in June and July.
Number per host: One.
Generations: At least two.

***Glypta rufiscutellaris* Cress.**

Host: *Anacampsis innoculella* (Zell.).
Locality: Kokadjo, Maine.
Adults: July.
Number per host: One.
Generations: Probably two.

***Glypta simplicipes* Cress.**

Hosts: *Acrobasis caryivorella* Rag., *Archips rosaceana* (Harr.), *A. rosana* (L.).
Localities: Bedford, Forest Hills, and Melrose, Mass.; and Branford, Conn.
Adults: June and July.
Number per host: One.
Generations: At least two.

***Glypta* sp.**

Host: *Olethreutes albiciliana* (Fern.).
Locality: Bangor, Maine.
Adults: June.
Number per host: One.
Generations: At least two.

***Glypta varipes* Cress.**

Hosts: *Petrova comstockiana* (Fern.), *Rhyacionia frustrana* (Comst.), *R. rigidana* (Fern.).
Localities: Nantucket, Mass.; and Croton Falls, N. Y.
Adults: May and June.
Number per host: One.
Generations: Probably two.
Hibernation: In cell with host larva.

Tribe Lissonotini

***Lampronota sesiavora* (Rohw.)**

Host: *Depressaria heracliana* (L.).
Localities: Morristown, North Branch, and Princeton, N. J.
Adults: Late in July and August.
Number per host: One.
Generations: Probably two.

***Lampronota* sp.**

Host: *Tetralopha* sp. near *asperatella* Clem.
Localities: Parlin Pond and Solon, Maine.
Adults: June.
Number per host: One.
Generations: At least two.
Hibernation: In cocoon.

***Pimplopterus parvus* (Cress.)**

Hosts: *Exoteleia pinifoliella* (Chamb.), *Rhyacionia buoliana* (Schiff.).
Localities: Belmont, Billerica, Forest Hills, and Melrose, Mass.
Adults: June and early July.
Number per host: One.
Generations: At least two.

***Pimplopterus recurvariae* (Cush.)**

Host: *Epinotia nanana* (Treits.).
Localities: Boothbay, Bristol, and Southport, Maine.
Adults: July.
Number per host: One.
Generations: Probably two.

***Pimplopterus* sp.**

Host: *Coleophora laricella* Hbn.
Locality: Hampden, Maine.
Adults: June.
Number per host: One.
Generations: Probably two.

***Syzeuctus elegans* (Cress.)**

Hosts: *Tetralopha asperatella* (Clem.), and *T.* sp. (new?) on aspen, *T.* sp. (new?) on beech, *T. robustella* Zell.
Localities: Jackman, Livermore Falls, Mayfield, Parlin Pond, and Solon, Maine; North Haven and Saybrook, Conn.; and Keene, N. H.
Adults: June to August.
Number per host: One.
Generations: Probably two.
Hibernation: In cocoon formed in host cocoon.

Subfamily Metopiinae

***Triclistus brunnipes* (Cress.)**

Host: *Anthophila pariana* (Clerck).
Localities: Boothbay and Glenburn, Maine; and Meredith, N. H.
Adults: May and July.
Number per host: One.
Generations: At least two.
Hibernation: In host pupa.

***Triclistus fulvipes* (Cress.)**

Hosts: *Acrobasis comptoniella* Hulst,‡ *Desmia funeralis* (Hbn.), *Evergestis straminalis* (Hbn.),‡ *Tetralopha robustella* Zell.
Localities: Concord, Keene, N. H.; and Dover and Wakefield, Mass.
Adults: June, July, August, and September.
Number per host: One.
Generations: Two.
Hibernation: In prepupal larva or pupa of host.

***Triclistus propinquus* (Cress.)**

Host: *Macrobotys pertextalis* (Led.).
Locality: Bedford, Mass.
Adults: May.
Number per host: One.
Generations: At least two.
Hibernation: In host pupa.

***Exochus albifrons* Cress.**

Host: *Archips cerasivorana* (Fitch).
Locality: North Branford, Conn.
Adults: July.
Number per host: One.
Generations: At least two.

***Exochus apicalis* Cress.**

Host: *Acrobasis coryliella* Dyar.
Locality: Wakefield, Mass.
Adults: August.
Number per host: One.
Generations: At least two.
Hibernation: Probably in host pupa.

***Exochus dorsalis* Cress.**

Host: *Salebria semiobscurella* Hulst.
Locality: York, Maine.
Adults: July.
Number per host: One.
Generations: One.
Hibernation: In host pupa.

***Exochus pallipes* Cress.**

Hosts: *Acrobasis comptoniella* Hulst, *Archips argyrospila* (Wlk.), *A. cerasivorana* (Fitch), *A. fervidana* (Clem.), *A. infumatana* (Zell.), *Episimus argutanus* (Clem.).
Localities: Many through New England; and Morristown, N. J.
Adults: Late in June, July, and August.
Number per host: One.
Generations: At least two.
Hibernation: In host pupa.

***Exochus* sp.**

Host: *Anacampsis innoculella* (Zell.).
Locality: Many throughout New England.
Adults: July and August.
Number per host: One.
Generations: At least two.
Hibernation: In host pupa.

Subfamily Ophioninae

Tribe Campoplegini

***Campoplex frustranae* Cush.**

Host: *Rhyacionia frustrana* (Comst.).
Locality: Nantucket, Mass.
Adults: Late in May and June.
Number per host: One.
Generations: One.
Hibernation: In cocoon.

***Campoplex infumatus* (Prov.)**

Host: *Anacampsis rhoifructella* (Clem.).
Locality: Melrose, Mass.
Adults: June, July.
Number per host: One.
Generations: At least two.

***Campoplex nanana* Townes.**
Host: *Epinotia nanana* (Treits.).
Localities: Many along the coast of Maine.
Adults: June and July.
Number per host: One.
Generations: Unknown.

***Campoplex rufipes* (Prov.)**
Host: *Coleophora laricella* Hbn.
Localities: Augusta, Maine; Berlin, N. H.; and Greenfield, N. Y.
Adults: June.
Number per host: One.
Generations: Unknown.

***Campoplex* sp.**
Host: *Anthophila pariana* (Clerck).
Locality: Melrose, Mass.
Adults: August.
Number per host: One.
Generations: Unknown.

***Campoplex* sp.**
Host: *Dichomeris marginella* (F.).
Locality: Boxford, Mass.
Adults: July.
Number per host: One.
Generations: Unknown.

***Campoplex* sp.**
Host: *Exartema valdanum* McD.
Locality: Wakefield, Mass.
Adults: July.
Number per host: One.
Generations: Unknown.

***Campoplex* sp.**
Host: *Laspeyresia youngana* (Kearf.).
Locality: Groton, Vt.
Adults: Late in May.
Number per host: One.
Hibernation: Cocoon in spruce cones.

***Campoplex* sp.**
Host: *Recurvaria piceaella* Kearf.
Locality: Xmas Cove, Maine.
Adults: June.
Number per host: One.
Hibernation: In host larva.

***Campoplex* sp.**
Host: *Salebria semiobscurella* Hulst.
Locality: York, Maine.
Adults: May.
Number per host: One.
Generations: At least two.
Hibernation: In cocoon.

***Campoplex validus* (Cress.)**

Hosts: *Depressaria heracliana* (L.), *Phlyctaenia* sp. (on willow), *Pyrausta futilalis* (Led.). (Also see Misc. Pub. 188.)

Localities: Newport, Maine; Pelham, N. H.; Chester and Manchester, Vt.; several in Massachusetts; and Bound Brook, Bridgewater, and White Horse, N. J.

Adults: May, June, July, August, and September.

Number per host: One.

Generations: Two.

Hibernation: In cocoon.

***Idechthis* sp.**

Host: *Tetralopha asperatella* (Clem.).

Locality: Wakefield, Mass.

Adults: July.

Number per host: One.

Generations: Probably two.

Hibernation: In host cocoon.

***Campoletis patsuiketorum* (Vier.)**

Host: *Phlyctaenia tertialis* (Guen.).

Locality: Calais, Maine.

Adults: June.

Number per host: One.

Generations: Unknown.

Hibernation: In cocoon.

***Nepiera marginata* (Prov.)**

Host: *Macrobotys perteatalis* (Led.).

Locality: Melrose, Mass.

Adults: July.

Number per host: One.

Generations: Probably two.

***Phobocampe* sp.**

Host: *Trichoptilus lobidactylus* (Fitch).

Localities: Melrose, Saugus, and Wakefield, Mass.

Adults: Late in May and June.

Number per host: One.

Generations: One.

Hibernation: In cocoon.

***Horogenes comptoniellae* (Vier.)**

Hosts: *Acrobasis betulella* Hulst, *A. comptoniella* Hulst, *Exartema sericoranum* Wlshm.

Localities: Lunenburg, Maynard and Wellesley, Mass.; and Westerly, R. I.

Adults: July.

Number per host: One.

Generations: Probably two.

***Horogenes insularis* (Cress.)**

Host: *Evergestis straminalis* (Hbn.).

Locality: Patton, Maine.

Adults: October.

Number per host: One.

Generations: At least two.

***Horogenes montanus* (Ashm.)**

Host: *Anacampsis innoculella* (Zell.).
Locality: Kokadjo, Maine.
Adults: Late in June and July.
Number per host: One.
Generations: Probably two.

***Horogenes* n. sp.**

Host: *Tetralopha*, near *asperatella* (Clem.).
Locality: Jackman, Maine.
Adults: June.
Number per host: One.
Generations: Two.
Hibernation: In cocoon.

***Horogenes parviformis* (Vier.)**

Hosts: *Acrobasis betulella* Hulst, *Archips cerasivorana* (Fitch), *A. fervidana* (Clem.).
Localities: Bangor and Hebron, Maine; Claremont, N. H.; and Lakeville, Mass.
Adults: June and July.
Number per host: One.
Generations: At least two.

***Horogenes solenobiae* (Ashm.)**

Host: *Epinotia nanana* (Treits.).
Locality: Southport, Maine.
Adults: June.
Number per host: One.
Generations: Probably two.

***Horogenes* sp.**

Host: *Anthophila pariana* (Clerck).
Locality: Bath, Maine.
Adults: September.
Number per host: One.
Generations: Probably two.

***Horogenes* sp.**

Host: *Coleophora laricella* Hbn.
Localities: Many from Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and New York.
Adults: June and early in July.
Number per host: One.
Generations: Probably two.

***Horogenes* sp.**

Host: *Exartema valdanum* McD.
Locality: Orrington, Maine.
Adults: July.
Number per host: One.
Generations: Probably two.

***Horogenes* sp.**

Host: *Salebria semiobscurella* Hulst.
Locality: York, Maine.
Adults: July.
Number per host: One.
Generations: One: possibly two.
Hibernation: In cocoon.

***Horogenes* sp.**

Host: *Tetralopha* sp. (new?) (on beech).
Locality: Livermore Falls, Maine.
Adults: July.
Number per host: One.
Generations: Possibly two.
Hibernation: In cocoon.

***Hyposoter fugitivus fugitivus* (Say)**

Host: *Salebria semiobscurella* Hulst. (Also see Misc. Pub. 188.)
Locality: Wakefield, Mass.
Adults: June.
Number per host: One.
Generations: Two, possibly more.
Hibernation: In cocoon.

***Hyposoter* sp.**

Host: *Dichomeris marginella* (F.).
Locality: Abington, Mass.
Adults: July.
Number per host: One.
Generations: Probably two.

***Hyposoter* sp.**

Host: *Oidaematophora homodactylus* (Wlk.).
Locality: Melrose, Mass.
Adults: June.
Number per host: One.
Generations: At least two.

Tribe Cremastini

***Zaleptopygus retiniae* (Cress.)**

Host: *Tetralopha robustella* Zell.
Localities: Concord, N. H.; and Dover, Sandwich, and Saugus, Mass.
Adults: July.
Number per host: One.
Generations: One.
Hibernation: In cocoon or prepupal larva of host.

***Zaleptopygus* sp., near *tetralophae* (Cush.)**

Hosts: *Tetralopha asperatella* (Clem.), *T.* sp. (new?) (on beech).
Localities: Livermore Falls, Maine; and Wakefield, Mass.
Adults: June and July.

Number per host: One.
Generations: Probably two.
Hibernation: In cocoon or prepupal larva of host.

***Zaleptopygus* sp.**

Host: *Argyrotaenia pinatubana* (Kearf.).
Locality: Carver, Mass.
Adults: June.
Number per host: One.
Generations: Probably two.
Hibernation: In cocoon.

***Zaleptopygus* sp.**

Host: *Phalonia rutilana* (Hbn.).
Locality: Waldoboro, Maine.
Adults: June.
Number per host: One.
Generations: Probably two.

***Cremastus epagoges* Cush.**

Host: *Rhyacionia frustrana* (Comst.).
Locality: Dennis, N. J.
Adults: July.
Number per host: One.
Generations: At least two.

***Cremastus forbesi* Weed**

Hosts: *Anacampsis rhoifructella* (Clem.), *Depressaria heracliana* (L.).
Localities: Kenduskeag, Maine; and Melrose, Mass.
Adults: June, July, and August.
Number per host: One.
Generations: At least two.

***Cremastus* sp.**

Host: *Epinotia nanana* (Treits.).
Locality: Bristol, Maine.
Adults: July.
Number per host: One.
Generations: Probably two.

Tribe Anomalini

***Trichomma reticulatum* Davis**

Host: *Salebria semiobscurella* Hulst.
Locality: York, Maine.
Adults: June and July.
Number per host: One.
Generations: Possibly two.
Hibernation: In host pupa.

***Gravenhorstia aclerivorus* (Roh.)**

Host: *Acrobasis comptoniella* Hulst.
Locality: Bangor, Maine.
Adults: August.
Number per host: One.
Generations: At least two.
Hibernation: In host pupa.

***Labrorychus prismaticus* (Nort.)**

Hosts: *Acrobasis comptoniella* Hulst, *Archips cerasivorana* (Fitch), *A. fervidana* (Clem.), *A. infumatana* (Zell.), *Exartema sericoranum* Wlshm., *Psilocorsis faginella* (Chamb.)‡.
Localities: Many through New England; Hoosick Falls and Patchogue, N. Y.; and Toledo, Ohio.
Adults: July and August.
Number per host: One.
Generations: Two.
Hibernation: In host pupa.

***Labrorychus* sp.**

Host: *Episimus argutanus* (Clem.).
Locality: Hampden, Maine.
Adults: June.
Number per host: One.
Generations: Two.

***Labrorychus* sp.**

Host: *Phlyctaenia tertialis* (Guen.).
Locality: Calais, Maine.
Adults: July.
Number per host: One.
Generations: One.
Hibernation: In host pupa.

***Therion sassacus* Vier.**

Host: *Depressaria heracliana* (L.).
Locality: Manchester, Vt.
Adults: August.
Number per host: One.
Generations: Two.
Hibernation: In host pupa.

Subfamily Mesochorinae

***Mesochorus discitergus* (Say)**

Host: *Phlyctaenia tertialis* (Guen.).
Locality: Bangor, Maine.
Adults: June.
Number per host: One.
Generations: Unknown.
Hibernation: In cocoon of primary parasite (*Meteorus?*).

***Mesochorus* sp.**

Hosts: *Macrobotys pertextalis* (Led.), *Pyrausta futilalis* (Led.).
Localities: Atkinson, N. H.; and Saugus, Mass.
Adults: Late in June, and September.
Number per host: One.

Generations: At least two.
Hibernation: In cocoon of primary parasite (*Apanteles*).

FAMILY TRICHOGRAMMATIDAE

***Trichogramma minutum* Riley**

Host: *Rhyacionia buoliana* (Schiff.).
Locality: Wakefield, Mass.
Adults: Late in July. Ex eggs of host.
Number per host: Probably one.
Generations: Several in eggs of various hosts.

FAMILY EULOPHIDAE

Subfamily Eulophinae

***Pnigalio maculipes* (Cwfd.)**

Hosts: *Bucculatrix ainsliella* Murt., *B. packardella* Chamb.
Localities: Beverly and Quincy, Mass.
Adults: Late in June, July, and August.
Number per host: One, possibly more in some hosts.
Generations: At least two.

***Sympiesis guttatipennis* Grlt.**

Host: *Exoteleia pinifoliella* (Chamb.).
Localities: Belchertown and Plymouth, Mass.
Adults: June.
Number per host: One; possibly two or three in some hosts.
Generations: Probably two or more.

***Sympiesis* n. sp.**

Host: *Exoteleia pinifoliella* (Chamb.).
Locality: Sudbury, Mass.
Adults: June.
Number per host: One, possibly more.
Generations: Probably two or more.

***Sympiesis nigrifemora* Ashm.**

Host: *Lithocolletis cincinnatiella* (Chamb.).
Locality: Dover, Mass.
Adults: August.
Number per host: One.
Generations: Probably two or more.

***Eulophus magnisulcatus* Grlt.**

Host: *Coleophora laricella* Hbn.
Localities: Arlington, Melrose, and No. Andover, Mass.; and Greenfield, N. Y.
Adults: June.
Number per host: One.
Generations: Probably two or more.

***Eulophus* sp.**

Host: *Anacampsis innoculella* (Zell.).
Locality: Kokadjo, Maine.
Adults: August.
Number per host: One.
Generations: Unknown.

***Eulophus* sp.**

Host: *Epinotia nanana* (Treits.).
Locality: Orr's Island, Maine.
Adults: June.
Number per host: One, possibly 2 or 3 in some hosts.
Generations: Unknown.

***Eulophus* sp.**

Host: *Exoteleia pinifoliella* (Chamb.).
Localities: Boylston and Lunenburg, Mass.
Adults: June and July.
Number per host: Possibly two or three.
Generations: Unknown.

***Eulophus* sp.**

Host: *Recurvaria apicitripunctella* (Clem.).
Locality: Beverly, Mass.
Adults: June.
Number per host: One.
Generations: Unknown.

***Dimmockia incongrua* (Ashm.) §**

Hosts: *Argyrotoxa semipurpurana* (Kearf.), *Episimus argutanus* (Clem.).
Localities: Roxbury, Mass., and Wallingford, Conn.
Adults: July–August.
Number per host: Gregarious.
Generations: One or two.
Hibernation: As pupa in host cocoon.
Hyperparasite on *Meteorus trachynotus* Vier. (U. S. Dept. Agr., Dept. Bul. 1487: 29–30, 1927.) Sometimes a primary parasite.

***Dimmockia* sp. §**

Host: *Coleophora laricella* Hbn.
Locality: Sharon, Vt.
Adults: July.
Generations: One or two.
A hyperparasite, though exact hymenopterous host is unknown as four species of primary parasites were recovered from this collection.

Subfamily Tetrastichinae

***Tetrastichus coerulescens* Ashm.**

Host: *Dichomeris marginella* (F.).
Locality: York, Maine.
Adults: Late in June and July.
Number per host: One.
Generations: Unknown.

***Tetrastichus marylandensis* (Grlt.) §**

Hosts: *Exoteleia pinifoliella* (Chamb.), *Rhyacionia frustrana* (Comst.).
Localities: Belchertown and Nantucket, Mass.
Adults: Late in May and June.
Number per host: One.
Generations: Unknown.

Possibly a Hyperparasite. Several species of hymenopterous primary parasites reared from above hosts.

***Tetrastichus modestus* How. §**

Host: *Pyrausta futilalis* (Led.).
Locality: Atkinson, N. H.
Adults: September.
Number per host: Not recorded.
Generations: At least two.
Hyperparasite on *Apanteles pyraustae* Vier.

***Tetrastichus* n. sp. (?) §**

Host: *Laspeyresia youngana* (Kearf.).
Locality: Groton, Vt.
Adults: June and July.
Number per host: One.
Generations: Unknown.
Hyperparasite on *Campoplex* sp.

***Tetrastichus* sp.**

Host: *Coleophora laricella* Hbn.
Localities: Sidney, Maine; Arlington, Mass.; and Somerville, N. J.
Adults: May.
Number per host: One.
Generations: Two or more.
Hibernation: On the larval case of host.

***Tetrastichus* sp.**

Host: *Exoteleia pinifoliella* (Chamb.).
Localities: Plymouth and Sherborn, Mass.
Adults: Late in June.
Number per host: One.
Generations: Unknown.

***Tetrastichus turionum* (Htg.)**

Host: *Rhyacionia buoliana* (Schiff.).
Locality: Matinecock, N. Y.
Adults: May.
Number per host: Gregarious; an average of 20 per host.
Generations: One.
Hibernation: As full grown larvae in host pupa.

***Testrastichus varicornis* (Grlt.)**

Hosts: *Epinotia nanana* (Treits.), *Rhyacionia frustrana* (Comst.).
Localities: Boothbay, Harpswell, Newagen, Southport, Maine; and Nantucket, Mass.
Adults: Late in May and June.
Number per host: One.
Generations: Unknown.

***Tetrastichus xanthops* (Ratz.)**

Host: *Coleophora laricella* Hbn.
Locality: Melrose, Mass.
Adults: June.
Number per host: Gregarious (two or three individuals).
Generations: Multibrooded.
Hibernation: On host larval mine of *Phyllotoma nemorata* (Fall.).

(?) *Melittobia* sp.
Host: *Exoteleia pinifoliella* (Chamb.).
Locality: Billerica, Mass.
Adults: July.
Number per host: One.
Generations: Unknown.

Subfamily Elachertinae

***Elachertus* sp.**
Host: *Coleophora laricella* Hbn.
Locality: Hancock, Maine.
Adults: June.
Number per host: One.
Generations: Unknown.

***Hyssopus thymus* Grlt.**
Hosts: *Dioryctria zimmermani* (Grate), *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.).
Localities: Many in New England, New York, and New Jersey.
Adults: May, June, and July.
Number per host: Gregarious, usually 1 to 4 per host.
Generations: Possibly only one.
Hibernation: As pupa in host gallery in bud or shoot.

***Cirrospilus cinctithorax* (Grlt.)**
Host: *Bucculatrix ainsliella* Murt.
Locality: Beverly, Mass.
Adults: July.
Number per host: One or more.
Generations: Probably one.
Hibernation: In host larval case.

***Cirrospilus flavicinctus* Riley**
Host: *Bucculatrix ainsliella* Murt.
Locality: Beverly, Mass.
Adults: July and August.
Number per host: One or more.
Generations: One.
Hibernation: As larvae in host larval case. (Doner, 1936. Ent. Soc. Amer. Ann. 29: 233–234.)

***Zagrammosoma interlineatum* Grlt.**
Hosts: *Exoteleia pinifoliella* (Chamb.), *Lithocolletis cincinnatiella* (Chamb.).
Localities: Boylston, Dover, Lunenburg, and Sudbury, Mass.
Adults: June, July, and August.
Number per host: Gregarious.
Generations: Unknown.

Subfamily Entedontinae

***Closterocerus tricinctus* (Ashm.)**
Host: *Exoteleia pinifoliella* (Chamb.).
Locality: Sherborn, Mass.
Adults: June.
Number per host: One.
Generations: Unknown.

***Euderus cushmani* (Cwfd.)**

Hosts: *Coleophora laricella* Hbn., *Dioryctria zimmermani* (Grote).
Localities: Many in New England and New York.
Adults: June and July.
Number per host: One.
Generations: Probably one.
Hibernation: In host larval case.

***Chrysocharis laricinellae* (Ratz.)**

Host: *Coleophora laricella* Hbn.
Localities: Corinth and Sydney, Maine; Sharon, Vt.; Stockbridge, Mass.; and Woodstock, Conn.
Adults: July.
Number per host: One.
Generations: One; sometimes a partial second generation. (Dowden, 1941. U. S. Dept. Agr. Tech. Bul. 757: 45.)
Hibernation: In host larval case.

***Chrysocharis* n. sp.**

Host: *Bucculatrix ainsliella* Murt.
Locality: Beverly, Mass.
Adults: July.
Number per host: Probably one.
Generations: Unknown.

***Derostenus silvia* (Grlt.)**

Hosts: *Coleophora laricella* Hbn., *Exoteleia pinifoliella* (Chamb.), *Recurvaria apicitripunctella* (Clem.).
Localities: Several localities in Massachusetts, and Woodstock, Conn.
Adults: June–July.
Number per host: One.
Generations: Unknown.

***Horismenus microgaster* (Ashm.)§**

Hosts: *Archips rosana* (L.), *Coleophora laricella* Hbn., *Exoteleia pinifoliella* (Chamb.), *Pyrausta futilalis* (Led.).
Localities: Atkinson, N. H.; Melrose, No. Andover, Sherborn, Mass.; and Woodstock, Conn.
Adults: June and September.
Number per host: One.
Generations: At least two.
Hibernation: Unknown.
Hyperparasite of *Apanteles* and other primary parasites.

***Horismenus violaceus* (Ashm.)**

Host: *Lithocolletis cincinnatiella* (Chamb.).
Locality: Dover, Mass.
Adults: August.
Number per host: Probably one.
Generations: Unknown.

***Pleurotropis bucculatricis* Gah.§**

Host: *Bucculatrix canadensisella* Chamb.
Locality: Kenduskeag, Maine.
Adults: June.

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Number per host: Probably one.
Generations: One.
Hibernation: On host.
Hyperparasite of *Bucculatriplex bucculatricis* (Ashm.).

***Pleurotropis sexdentata* (Grlt.)§**

Host: *Acrobasis comptoniella* Hulst.
Locality: North Andover, Mass.
Adults: July.
Number per host: One.
Generations: Unknown.
A hyperparasite, probably of *Meteorus indagator* Riley.

***Pleurotropis tarsalis* (Ashm.)§**

Host: *Pterophorus periscelidactylus* (Fitch).
Locality: Melrose, Mass.
Adults: July.
Number per host: One.
Generations: One or two. (Muesebeck and Dohanian, 1927. U. S. Dept. Agr. Dept. Bul. 1487, 31.)
A hyperparasite of *Apanteles* sp.

FAMILY ELASMIDAE

***Elasmus atratus* How.§**

Hosts: *Acrobasis comptoniella* Hulst, *Pterophorus periscelidactylus* (Fitch), *Pyrausta futilalis* (Led.).
Localities: Atkinson, N. H.; and Melrose and North Andover, Mass.
Adults: July, September.
Number per host: Gregarious.
Generations: Two or more.
Hibernation: As pupae within host cocoon.
Sometimes it acts as a hyperparasite of *Apanteles* sp.

FAMILY ENCYRTIDAE

Subfamily Encyrtinae

***Copidosoma gelechiae gelechiae* How.**

Host: *Gnorimoschema gallaesolidaginis* (Riley).
Locality: Melrose, Mass.
Adults: August–September.
Number per host: Gregarious.
Generations: One.
Hibernation: In egg of host.

***Copidosoma geniculatum* (Dalm.) (?)**

Host: *Rhyacionia frustrana* (Comst.).
Locality: Nantucket, Mass.
Adults: Late in May.
Number per host: Gregarious.
Generations: Probably one.
Hibernation: In host larva.

***Copidosoma* n. sp.**

Hosts: *Epinotia nanana* (Treits.), *Exoteleia pinifoliella* (Chamb.), *Phalonia rutilana* (Hbn.), *Recurvaria apicitripunctella* (Clem.), *R. thujaella* Kearf.
Localities: Many in Maine and Massachusetts.
Adults: June–July.
Number per host: Gregarious (many).
Generations: Probably one.
Hibernation: In host larva.

***Copidosoma* n. sp.**

Hosts: *Anacampsis innoculella* (Zell.), *A. rhoifructella* (Clem.).
Localities: Melrose, Mass.; and Morristown, N. J.
Adults: July.
Number per host: Gregarious (many).
Generations: One.
Hibernation: In egg of host (?).

***Paraleurocerus bicoloripes* Grlt.**

Host: *Lithocolletis cincinnatiella* (Chamb.).
Locality: Dover, Mass.
Adults: August.
Number per host: Gregarious.
Generations: Unknown.

FAMILY EUPELMIDAE

***Eupelmus cyaniceps amicus* Grlt.**

Host: *Rhyacionia frustrana* (Comst.).
Locality: Nantucket, Mass.
Adults: Late May and June.
Number per host: Gregarious.
Generations: At least two.
Hibernation: In host larval cavity.

FAMILY PERILAMPIDAE

***Perilampus fulvicornis fulvicornis* Ashm.**

Hosts: *Acrobasis betulella* Hulst, *Archips fervidana* (Clem.), *Pyrausta futilalis* (Led.), *Rhyacionia rigidana* Fern.
Localities: Bangor, Hebron, Oldtown, Maine; Pelham, N. H.; Wellesley and Winchester, Mass.; Croton Falls and Moreau, N. Y.; and Bridgewater, N. J.
Adults: July, August, and September.
Number per host: One.
Generations: At least two.
Hibernation: In larval stage.

FAMILY TORYMIDAE

Subfamily Monodontomerinae

***Idiomacromerus* n. sp.**
Host: *Meroptera pravella* (Grt.).
Locality: Rockport, Mass.
Adults: Late in July and August.
Number per host: Probably gregarious.
Generations: Probably one.
Hibernation: In host.

FAMILY PTEROMALIDAE

Subfamily Sphegigasterinae

Tribe Lamprotatini

***Lamprotatus* sp.**
Host: *Epinotia nanana* (Treits.).
Locality: Boothbay, Maine.
Adults: July.
Number per host: One.
Generations: Unknown.

Tribe Sphegigasterini

***Eurydinota lividicorpus* Grlt.**
Host: *Coleophora laricella* Hbn.
Locality: Stockbridge, Mass.
Adults: Late in May.
Number per host: Gregarious.
Generations: At least two.
Hibernation: In host larval case.

Subfamily Pteromalinae

Tribe Pteromalini

***Amblymerus* sp. §**
Host: *Archips cerasivorana* (Fitch).
Locality: Burnham, Maine.
Adults: September.
Number per host: Gregarious.
Generations: At least two.
A hyperparasite of the primary parasite *Actia* sp.

***Amblymerus verditer* (Nort.) §**
Host: *Epinotia nanana* (Treits.).
Localities: Kennebunk and Southport, Maine.
Adults: June.
Number per host: One or more.
Generations: At least two.
May act as a hyperparasite.

***Dibrachys cavus* (Wlk.) §**

Hosts: *Archips cerasivorana* (Fitch), *A. fervidana* (Clem.), *Fumaria casta* Pall.

Localities: Burnham and Ellsworth, Maine; Canaan, N. H.; Brookline and Winchester, Mass.; and Moreau, N. Y.

Adults: July–August.

Number per host: Gregarious.

Generations: Two or more.

Hibernation: In host pupa.

Sometimes a primary parasite, though more often a hyperparasite.

***Dibrachys* sp.**

Host: *Coleophora laricella* Hbn.

Locality: Winthrop, Maine.

Adults: June.

Number per host: One.

Generations: Unknown.

***Psychophagus omnivorus* (Wlk.) §**

Host: *Cnidocampa flavescens* Wlk.

Locality: Boston, Mass.

Adults: July.

Number per host: Gregarious.

Generations: Two or more.

Hibernation: In host pupa.

This species is often a hyperparasite. (U. S. Dept. Agr. Misc. Pub. 188, 153. 1934.)

***Habrocytus* sp.**

Host: *Exoteleia pinifoliella* (Chamb.).

Locality: Boylston, Mass.

Adults: June.

Number per host: One.

Generations: At least two.

***Habrocytus thyridopterigis* How.**

Hosts: *Coleophora laricella* Hbn., *C. limosipennella* Dup., *Epinotia nanana* (Treits.), *Recurvaria apicitripunctella* (Clem.), *Rhyacionia buoliana* (Schiff.), *R. rigidana* Fern., *Thyridopteryx ephemeraeformis* (Haw.).

Localities: Many in Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, and Delaware.

Adults: Late in June, July, August, and October.

Number per host: One.

Generations: At least two.

Hibernation: As immature stage on host in larval case or cell.

***Hypopteromalus* sp. §**

Host: *Coleophora limosipennella* Dup.

Locality: Bradford, Vt.

Adults: July.

Number per host: One.

Generations: Unknown.

A hyperparasite on the primary parasite, *Apanteles* sp.

***Eurytoma crassineura* Ashm. §**

Host: *Acrobasis comptoniella* Hulst.
Locality: Kennebunk, Maine.
Adults: July.
Number per host: One.
Generations: At least two.
A hyperparasite. (This species is supposed to parasitize Scolytidae.)

***Eurytoma* n. sp. §**

Host: *Meroptera pravella* (Grt.).
Locality: Rockport, Mass.
Adults: July.
Number per host: One.
Generations: Probably two.
Hibernation: In host cocoon.
A hyperparasite of *Apanteles* sp.

***Eurytoma solenozopheriae* Ashm. §**

Host: *Bucculatrix ainsliella* Murt.
Locality: Beverly, Mass.
Adults: July.
Number per host: One.
Generations: At least two.
A hyperparasite; probably from *Pnigalio maculipes* (Cwfd.).

***Eurytoma* sp. §**

Host: *Coleophora laricella* Hbn.
Locality: Lunenburg, Mass.
Adults: July.
Number per host: One.
Generations: Unknown.

***Eurytoma* sp. §**

Host: *Rhyacionia rigidana* Fern.
Locality: Croton Falls, N. Y.
Adults: August.
Number per host: One.
Generations: At least two.

***Eurytoma tylodermatis* Ashm. §**

Hosts: *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.).
Localities: Brookline, Hingham, and Nantucket, Mass.; Greenwich, Hamden, Middlefield, Conn.; Clarkstown, Oyster Bay, Rockland Lake, and Valhalla, N. Y.
Adults: May, June, and July.
Number per host: One.
Generations: At least two.
Hibernation: In larval cell.

FAMILY CHALCIDIDAE

Subfamily Haltichellinae

***Haltichella rhyacioniae* Gah.**

Host: *Rhyacionia frustrana* (Comst.).
Localities: Nantucket, Mass.; and Dennis, N. J.
Adults: May, June, and July.
Number per host: One.
Generations: Two or more.
Hibernation: In host pupa.

***Haltichella xanticles* (Wlk.)**

Hosts: *Coleophora laricella* Hbn., *Exoteleia pinifoliella* (Chamb.).
Localities: Sherborn, Mass.; and Woodstock, Conn.
Adults: Late in June and July.
Number per host: One.
Generations: Two or more.
Hibernation: In host larval case or mine.

Subfamily Brachymeriinae

***Brachymeria ovata ovata* (Say)**

Hosts: *Archips fervidana* (Clem.), *Thyridopteryx ephemeraeformis* (Haw.)
Localities: Mashpee, Mass.; and Harrington, Del.
Adults: July to October.
Number per host: One.
Generations: At least two.
Hibernation: Method unknown.

***Brachymeria* sp.**

Host: *Lagoa crispata* Pack.
Locality: Manchester, Conn.
Adults: August.
Number per host: One.
Generations: One.
Hibernation: In host cocoon.

Subfamily Chalcidinae

***Spilochalcis nortonii* (Cress.)**

Host: *Phobetron pithicium* (A. & S.).
Locality: Bolton, Conn.
Adults: Late in July.
Number per host: One.
Generations: One.
Hibernation: In host cocoon.

***Spilochalcis side* (Wlk.)**

Hosts: *Coleophora laricella* Hbn., *Epinotia nanana* (Treits.) *Eurukuttarus confederata* (Grt.), *Exoteleia pinifoliella* (Chamb.).
Localities: Many localities in Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and New York.
Adults: Late in June, July, and August.
Number per host: One.
Generations: At least two.

FAMILY CERAPHRONIDAE

***Aphanogmus* sp.**

Host: *Epinotia nanana* (Treits.).
Locality: Ocean Point, Maine.
Adults: Late in June.
Number per host: One.
Generations: Unknown.

***Conostigmus* sp.**

Host: *Epinotia nanana* (Treits.).
Locality: Boothbay, Maine.
Adults: June–July.
Number per host: One.
Generations: Unknown.

FAMILY BETHYLIDAE

***Goniozus* n. sp.**

Host: *Rhyacionia frustrana* (Comst.).
Locality: Nantucket, Mass.
Adults: July.
Number per host: One.
Generations: Unknown.

***Goniozus* sp.**

Host: *Rhyacionia buoliana* (Schiff.).
Locality: Brookline, Mass.
Adults: June.
Number per host: One.
Generations: Unknown.

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